



NATIONAL ENDOWMENT FOR THE

Humanities

DIVISION OF RESEARCH PROGRAMS

Narrative Section of a Successful Application

The attached document contains the grant narrative of a previously funded grant application, which conforms to a past set of grant guidelines. It is not intended to serve as a model, but to give you a sense of how a successful application may be crafted. Every successful application is different, and each applicant is urged to prepare a proposal that reflects its unique project and aspirations. Prospective applicants should consult the application guidelines for instructions. Applicants are also strongly encouraged to consult with the NEH Division of Research Programs staff well before a grant deadline.

Note: The attachment only contains the grant narrative, not the entire funded application. In addition, certain portions may have been redacted to protect the privacy interests of an individual and/or to protect confidential commercial and financial information and/or to protect copyrighted materials.

Project Title: The Emergence of HIV/AIDS

Institution: Indiana University

Project Director: William H. Schneider

Grant Program: Collaborative Research

**National Endowment for the Humanities
Collaborative Research Grants**

The Emergence of HIV/AIDS
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1. Statement of significance and impact

The emergence of new diseases is one of the most important health concerns in recent decades, and the case of HIV/AIDS is clearly the most frequently mentioned cautionary tale. There is widespread agreement that several human immune viruses (as many as a dozen in two genetically different groups) recently adapted from long-established simian immune viruses in central and West Africa. When—and especially how—this adaptation occurred has been a source of disagreement, although the earliest estimated dates reach back to the 1920s. Yet until now, the explanations for HIV emergence have been offered with little, if any, research by humanities scholars.

Our research so far has evaluated the three most frequently offered explanations for the emergence of HIV/AIDS, weighing them against relevant African historical and anthropological scholarship on great ape and monkey hunting; colonial transformations including urbanization and human mobility; and new medical interventions, specifically injection campaigns and blood transfusions. While these explanations are germane to investigations of HIV emergence, they sorely lack the broad historical and comparative perspectives and in-depth understanding of the political, economic, social, environmental, and cultural relations in Africa needed to explain what happened.

An NEH grant would support collaborative research by humanities scholars who are experts in these fields, including an anthropologist and environmental historian who have studied great ape hunting in central Africa, an urban historian of both former French and Belgian Congo, a scholar of prostitution in central Africa, a medical anthropologist of Portuguese Africa, and two historians of Western medicine in Africa. This group developed from an earlier collaboration with virological and epidemiological specialists of HIV/AIDS.

In consultation with these foremost research scientists studying simian viruses and emerging diseases, we have also found that most explanations offered by medical scientists have focused on finding the “smoking gun,” i.e., the first appearance of a new virus. Their hypotheses, based on estimates of dates from epidemiological and evolutionary biological models, have recently relied on certain kinds of historical data, but frequently deploy literalist, uncritical interpretations of their sources, and mobilize a single explanation for the virus’s appearance at a certain moment. Our research seeks to remedy these shortcomings by bringing critical humanities’ approaches to a wide array of field and archival sources, in order to explore several possible, interacting developments that influenced the transformation of simian immunodeficiency viruses into human ones, including the virus that precipitated a global human pandemic. Instead of narrowly seeking “HIV origins” at a single moment, our research will focus more broadly on the historical epidemiology of everyday, socio-economic and political processes, as well as medical procedures during the colonial and postcolonial periods.

The significance of this project transcends the question of AIDS emergence. It can offer a model for medical science and public health researchers who recognize that their studies need to account for the larger historical, political, economic, social, and cultural relations and processes that shape disease emergence. Our project promises to demonstrate the important contributions that collaborative humanities research can bring to biomedical studies and public health policy.

4. Narrative: The Emergence of HIV/AIDS

A. Substance and context

Emergence of HIV/AIDS as a Historical Problem

The emergence of HIV has received considerable attention from biomedical researchers, but with a few notable exceptions, very little from historians. In 2011-12 alone, two major books and four articles in prominent biomedical journals appeared in print (Pepin 2011; Pepin 2012; Timberg and Halperin 2012; Sharp and Hahn 2011; Nuno et al. 2012). Yet, not a single historian authored or co-authored these publications. Biomedical researchers and journalists have, of course, consulted historians and anthropologists about their perspectives on the history of HIV in Africa, but without serious work by humanities scholars, few of whom until now have directly addressed the question (Ilfiffe 2006; Grmek 1990; Schoepf 2002; Chitnis, et al. 2000), these and other explanations of the emergence of AIDS are at a disadvantage.

To appreciate why HIV emergence is primarily an historical question requiring contributions of humanities scholars, some scientific background is necessary. We use the term “emergence” to refer not only to a pathogen’s adaptation from one species to another but also to the historical context that permitted its transformation from localized infection into a global pandemic. Though rarely mentioned in wider coverage, researchers have discovered more than one human immunodeficiency virus. The pandemic virus afflicting much of the world, including large parts of central, east and southern Africa, is HIV type 1 group M (HIV-1M); virologists have identified its beginnings in a simian immunodeficiency virus (SIV) that has affected a subspecies of common chimpanzees (*Pan troglodytes troglodytes*) living in the rain forests of southeastern Cameroon, perhaps for millennia (Keele et al. 2006; Sharp and Hahn 2011; Wertheim and Worobey 2009). There are also three other HIV-1 viruses (groups N, O, P) that emerged from other non-human primates, including western lowland gorillas, but because they were not very contagious these viruses account for a miniscule proportion of all HIV infections. A second large group of HIVs is HIV-2, which emerged in human populations from sooty mangabeys (*Cercocebus atys*

atys) in the forests of Guinea Bissau and the Ivory Coast; because these strains are more contagious in humans they now account for about 5% of all HIV infections.

Since humans and simians have interacted in Africa for millennia and there is no evidence of human immune viruses before the twentieth century, most virologists agree that HIV was not a zoonosis, in the sense of a pathogen in animals that simply “jumped” to human beings causing significant illness, sustained human-to-human transmission, or epidemics (like rabies, ebolavirus, and influenza). Rather the simian viruses are better described only as “zoonotically transmitted,” in that the result is a mild or relatively easily suppressed infection (Hahn, et al. 2000; Marx, et al, 2004). Hence the virus was only rendered pathogenic and transmissible between human beings after a host adaptation occurred within a new social context.

To illuminate why simian viruses adapted over time to human beings and human transmission, we should begin by understanding when this adaptation occurred. Because HIVs evolve as they are transmitted, virologists can identify differences in DNA sequences of virus samples from different times and project back to the date of the common source. This original source is referred to as the Most Recent Common Ancestor (MRCA) and is presumed to represent the date of the earliest adapted human virus. Generally, studies demonstrate that the HIVs crossed over to human populations on several independent occasions during the first part of the twentieth century in West and Central Africa. For the pandemic HIV-1M virus, discovered in the early 1980s, the estimated dates of this host shift range between 1919 and 1945 (median 1933); subsequent analysis moved the dates back to 1908 to 1933 (median 1921) (Korber, et al. 2000; Worobey, et al. 2008). The less widespread, less aggressive HIV-2 virus has not been studied as much, but researchers have suggested that its groups A and B emerged in human beings in Guinea-Bissau in 1940 and 1945, but became epidemic during the country’s independence war from 1963 to 1974 (Lemey et al 2003).

Published Work in the Field

Why and how these crossovers took place has constituted the focus of much biomedical debate, and as a result researchers have offered numerous explanations both for the mechanisms of the simian virus's adaptation to human beings, as well as the broad contextual factors that facilitated human exposure to and transmission of the virus. In the late 1990s, journalist Edward Hooper argued that a contaminated polio vaccine was to blame for the virus's crossover to human beings, although subsequent studies categorically disproved the claim. Since then, biomedical researchers generally accept that exposure to chimpanzees as pets or objects of hunting and butchering was a more plausible source of zoonotic transmission (Hooper 1999; Worobey et al., 2004). They have also recognized the broader historical circumstances facilitating human-to-human transmission of the virus. For example, Preston Marx and Ernest Drucker proposed a "serial passage theory," in which the virus passed "serially" between those infected, for example, through contaminated syringes used on several patients, thus increasing the virus's virulence and capacity to adapt to its human host (Marx, et al. 2001; Drucker, et al. 2001).

More broadly, other biomedical researchers have pointed to the imposition of colonial rule and particular processes that it unleashed. The most frequently cited molecular biologist working on MRCA of HIV/AIDS first suggested that the establishment of Leopoldville (now Kinshasa) as the Belgian Congo's capital, and more generally "[t]he rise of cities" and "the founding and growth of colonial administrative and trading centres such as Kinshasa" caused Central Africa "to become the epicentre of the HIV/AIDS pandemic" (Worobey, et al. 2008; Wertheim, et al. 2009). Others who focused on changes effected by colonial rule in the Belgian Congo, have mentioned conscription and forced labor, social turmoil, the disruption of "traditional" sexual practices, and massive vaccination campaigns (Chitnis, et al. 2000; Moore 2004). More recent explanations of the origins of pandemic HIV have ranged from the highly specific (genital ulcer diseases in "promiscuous urban communities") to broad, multi-causal factors (prostitution, human mobility, mass medical campaigns within the changing socio-political context of colonial rule) (De Sousa et al. 2010).

With few exceptions, all of these attempts at historical explanation lack the perspective and skills that experienced historians bring to such questions. One exception is an analysis written by historian John Iliffe, *The African AIDS Epidemic*, which offers a historical synthesis of the African AIDS epidemic up to 2006 (Iliffe 2006), including early chapters that provide an admirable overview of the first period of the epidemic's expansion in central African urban centers. In keeping with the aims of this historical synthesis, Iliffe reports – but does not critique – the broad explanations cited above for HIV's beginnings: “colonial innovations...[such as the] penetration of the forest for hunting, rubber collection and logging; increased viral transmission through labor concentrations and vaccine campaigns against sleeping sickness and smallpox; and the adaptation of the virus to humans through rapid passaging by arm-to-arm inoculation that would have the effect of accelerating evolution” (Iliffe 2006).

Iliffe's masterful synthesis is too broad, however, to provide much depth of historical analysis of the emergence of AIDS. A recent book that is more focused on this question is *Tinderbox*, published by *Washington Post* journalist Craig Timberg and epidemiologist-anthropologist Daniel Halperin (Timberg and Halperin 2012). Lacking any critical analysis of historical sources, the book nevertheless offers an indictment of colonial rule for triggering the AIDS pandemic and of contemporary global health actors for its intensification in Africa. Drawing exclusively from secondary historical sources, the authors argue that colonial rule transformed HIV from what might have been a “dead end” into a global pandemic: German colonial rule in southeastern Cameroon triggered new human mobility, propelling an HIV-infected person (hunter, porter, or trader) to colonial Kinshasa, where “sexual license” increased viral transmission, expanding transportation networks then catalyzed HIV's explosion elsewhere in equatorial Africa and ultimately, the world (Timberg and Halperin 2012). This account is highly selective, relies on stereotypes of central Africa's past, caricatures African “sexual behavior,” neglects a serious analysis of medical practice, and provides only snapshots of historical moments rather than fully developed historical processes that might have facilitated HIV emergence.

A few biomedical researchers have attempted archival research. Joao de Sousa and colleagues plumbed secondary literature and archival holdings in France and Belgium to argue that an

“unprecedented” epidemic of genital ulcer disease (GUD) among prostitutes and their African clientele in 1920s Leopoldville effectively facilitated HIV transmission (De Sousa, et al. 2010). Epidemiologist-physician Jacques Pepin in 2011 published *The Origins of AIDS*, drawing from colonial archival sources in Belgium, France, Canada, the U.S., Switzerland, and the Netherlands. The resulting work is an impressive effort to trace HIV-1M’s “origins” from the Cameroonian “cut hunter” (the almost mythical progenitor of the HIV pandemic), to the cataclysmic changes unleashed by colonial rule in the cities of Brazzaville and Kinshasa and such forced labor projects as the Congo-Océan railway. Among the changes he mentions are population expansion, human mobility, urban gender imbalances, sexual and domestic activities of *femmes libres*, and sexually transmitted diseases (Pepin 2011).

Echoing claims of researchers Marx, Drucker and Alcabes, Pepin highlights the contributions to HIV emergence of mass injection campaigns and unsterile injection practices against sleeping sickness, yaws, syphilis, tuberculosis and malaria (Marx, et al. 2001; Gisselquist 2003; Pepin, et al. 2006; Pepin, et al. 2008; Pepin, et al. 2010). For Pepin, contaminated needles were not the mechanism that adapted the simian virus to human beings, but rather a key mode of transmission that magnified HIV’s initial spread. Hence, while not always in a form that Africanists would easily recognize, biomedical researchers’ writings on the “origins” of HIVs -- theories about the mechanism of a host shift between simian viruses and human ones, and broad explanations invoked to justify the dates and mechanisms of emergence -- all constitute histories that contribute importantly to our understandings of when and why HIV-1M and HIV-2 became epidemic.

Critique of Research to Date

However, these explanations are flawed in several ways that we propose to remedy. Our team of Africanist humanities scholars has grown over the past half dozen years and now includes two medical historians, an environmental and an urban historian, plus two anthropologists, all of whom do field research in these regions of Africa. In evaluating the most frequent explanations offered for HIV/AIDS emergence, we have found several shortcomings. First, previous writers do not evaluate the colonial

sources critically or consistently, neither do they interrogate the political and professional interests that shaped colonial claims (De Sousa, et al. 2010; Pepin 2011). Thus, while these scientific researchers use written evidence as if it offers indisputable proof of past reality, Africanist historians recognize the blind spots, biases, predilections, and broader contexts of such primary sources that shape their interpretation, and that these sources and the archives that house them, are not simply “sites of knowledge retrieval but of knowledge production” (Stoler 2002).

A related methodological shortcoming involves the sources that have gone entirely unexplored in debates about HIV beginnings. While biomedical researchers have largely confined their analyses to secondary literature and colonial medical and other documents, Africanists have a rich tradition of investigating a much wider array of sources—oral historical testimonies, material culture, the popular press, photography, particular technologies—that could offer insight into changing relations and practices that facilitated HIV emergence. Histories of HIV emergence would benefit from close analyses of how African social and professional groups depict changing hunting and butchering technologies and practices, mobility, gender relations and domestic, sexual, and livelihood practices in urban centers, and medical practices in hospitals and clinics; such histories would be further enriched by attention to social, political, economic, and cultural conditions that produced varied sources (Stoler 2002).

A second problem is that almost all biomedical and other works cited above focus exclusively on change, not on historical continuities: with dates of HIV emergence in hand, they seek out what they presume to be new developments, but they fail to contextualize such changes in a longer historical framework. To be sure, German, French, and Belgian colonial rule imposed important new political and economic relations on equatorial African societies, but certain practices and processes were well under way in the eighteenth, nineteenth, and twentieth centuries, including human mobility, long- and short-distance trade, markets, and hunting.

Third, biomedical writings have tended to focus on large-scale, traumatic transformations and events that may have contributed to HIV emergence, but have overlooked everyday practices. Urbanization, prostitution, sexually transmitted diseases, and disease control campaigns have all been

mobilized to explain HIV emergence (Pepin 2011; Timberg and Halperin 2012; Da Sousa, et al.2010; Worobey, et al. 2008; Wertheim, et al. 2009; Pepin, et al. 2010; Drucker, et al. 2001). This is quite right, but we would argue, too, that Africanist historians' attention to more mundane, daily practice can potentially illuminate much about HIV emergence: the use of blood transfusions as therapy, the conduct of daily medical care, making a living in urban centers, and the historical participants in and practices of hunting and butchering of game. Broader knowledge of African history raises additional questions about the daily practices surrounding each of these topics (hunting, urbanization and migration, medical care) that can shed alternative light on HIV emergence.

Finally, biomedical researchers' relentless search for the "smoking gun" of HIV "origins" has itself raised questions. (Porter 2000) In the early 1970s, Michel Foucault characterized the search for "origins" as a futile "attempt to capture the exact essence of things" and to recover a pure "truth". He proposed instead "historical beginnings" to capture "the accidents, the minute deviations – or conversely, the complete reversals – the errors, the false appraisals, and the faulty calculations that gave birth to those things which continue to exist" (Foucault 2003). HIV emergence is so profoundly entangled in ongoing human social, political, and ecological processes and moments of historical rupture in equatorial Africa that for historians, any effort to delineate a single moment of "origin" might be considered a fool's errand.

Major Issues to be Addressed

The most widely offered explanations for HIV emergence fall into three main themes: great ape and monkey hunting; colonial transformations including urbanization and human mobility; and new medical interventions, specifically injection campaigns and blood transfusions. The research to be conducted in the proposed project will focus on these themes plus a fourth, addressing how these developments played out in Portuguese Africa (Guinea-Bissau and Northern Angola). The latter theme, although a crucial site of developments facilitating HIV emergence, has been woefully understudied. The scope and source materials to be consulted for each theme are as follows.

1) Great ape and monkey hunting

That pandemic HIV-1M came from a chimpanzee SIV (SIVcpz) localized in southeastern Cameroon is widely accepted, but biomedical researchers have generated a mythical progenitor (the “cut hunter”) and narrative to explain the viral host shift from chimps to people (Keele et al. 2006). From this finding, analysts have concluded that the voracious demands of new colonial regimes intensified human activities in the forest, increasing the frequency of hunting, trapping, and butchering of great apes, and thus amplifying human exposure to the simian virus (Chitnis et al. 2000; Worobey et al. 2008; Hahn et al. 2000; Takehisa et al. 2009). According to this model, the infected person (hunter or trader) would then have traveled by steamer from an inland port (Moloundou or Ouesso) to Kinshasa.

Several fallacious presumptions undercut the contention that colonial rule intensified human contact with great apes: precolonial societies in equatorial Africa lived in peaceful isolation; they did not trade or have markets; they possessed no firearms and thus rarely hunted chimpanzees; and based on contemporary observations of intensive game hunting, hunting expanded in linear fashion from the imposition of colonial rule. The research we propose confronts these assumptions.

Our research will examine the historical context in west central Africa for the beginnings of HIV and the adaptation of SIVcpz to human beings. Our aim is to move beyond speculation to a fully fleshed-out history of adaptation and early emergence. We will develop a grounded analysis of the changing relations between people and great apes in this forest; between European colonizers, colonial personnel (including colonial troops, the *tirailleurs Sénégalais*), and colonial subjects; between all residents of this forest, available technologies (hunting, trapping, but also transportation) and differential access to such technologies among particular socio-political groups in the 19th to mid-20th centuries.

Two key questions will guide this research. First, what continuities and changes occurred among the techniques, technologies, and participants in great ape hunting, trapping, and pet keeping between the mid-19th and mid-20th centuries in southeastern Cameroon? While previous analyses have assumed that early colonial rule brought more powerful weapons and increased ape hunting to southeastern Cameroon, they have paid no attention to the political violence, economic competition, mobility, and available

weaponry in the 19th century in this region (Pepin 2011; De Sousa et al. 2010; De Sousa et al. 2012). Moreover, at times these analyses evaluate past practices and exposure to SIV by using evaluations of contemporary patterns and practices. (Pepin 2011) Investigating existing written sources in several libraries and archives in France and Cameroon, and integrating ethnographic evidence from southeastern Cameroon, northern Congo, and southwestern Central African Republic, we aim to identify those practices, technologies, and socio-economic and political relations that changed in the colonial period, and those that continued earlier historical processes (Rupp 2011; Copet-Rougier 1998; Coquery-Vidrovitch 1965; Coquery-Vidrovitch 1972). Did participants and their socioeconomic roles in hunting, trapping and butchering change over time? What spatial variations in hunting, trapping, and butchering practices existed in this region, and how were they shaped by and did they contribute to colonial-era economies? We will pay careful attention to the changing limitations on hunting and trapping, articulated and applied by African and European authorities.

The second question investigates historically plausible ways that HIV-1M might have emerged from southeastern Cameroon, exploring changing local mobility patterns from the second half of the 19th to the mid-20th centuries (Klieman 2003). In contending that intensive mobility only began during the colonial period, and that the first HIV-infected African traveled by steamer to from southeastern Cameroon to colonial Kinshasa, the “cut-hunter” scenario rests largely on guess-work and supposition. Its proponents have paid little attention to actual, changing mobility patterns or restrictions, new opportunities, and new restrictions during this period. In tackling the question about plausible means of early emergence, we will situate the first decades of colonial rule within longer-term patterns of human mobility. Using archival and ethnographic sources, we will then examine changing riverine and later road transport, investigating the frequency of such transport as well as any restrictions on passengers (both human and great ape). Third, we will collect oral histories concerning mobility patterns during this period, detailing linkages with local colonial economic and administrative centers such as Kika and Moloundou in Cameroon and Ouessou, Republic of Congo. These towns along the Ngoko River provide crucial links to the larger economic and political networks throughout the Congo River basin, including, ultimately,

colonial Kinshasa where the virus is known to have gone through crucial human adaptation. Finally, we will also examine available written, oral, and other sources for insight into changing sexual relations between men (European administrators, concessionary company agents, *tirailleurs*, African colonial subjects) and African women. Such relations have been fruitfully investigated by historians elsewhere, but not in this particular context of HIV emergence (Hunt 1999; Lauro 2005).

By embracing a critical approach to colonial sources, investigating a much broader array of sources to illuminate the above questions, and attending to longer-term processes sweeping this part of equatorial Africa over the 19th and 20th centuries, we will focus on daily practices of hunting, trapping, butchering, and pet keeping, rather than simply searching for single, dramatic events that were the result of cataclysmic changes brought by the imposition of colonial rule.

2) Colonial transformations including urbanization, prostitution, and human mobility

All existing studies of HIV and its origins refer broadly to the establishment of European colonial rule as the major change connected to the emergence of pandemic HIV, with little more than lists of examples of developments such as urbanization, reorienting mobility patterns, developing transportation networks, and precipitating labor and military movement. In the study of other cases, historians have done much research on how these developments facilitated infectious disease transmission (Feierman and Janzen 1992). New urban centers and colonial construction projects including denser settlement patterns, forced labor, and urban prostitution, particularly in Kinshasa and Brazzaville, are all more specific features that gave these cities prominent roles in HIV beginnings. These significant social changes require broader contextualization, attention to different sources, and closer analysis of colonial policies, interventions, and their wide-ranging consequences.

Because the sex-ratio imbalance in both colonial Kinshasa and colonial Brazzaville has prompted several biomedical studies to link urban prostitution to HIV emergence (Pepin 2012), we need to establish when prostitution became prevalent during the colonial period and the types of prostitution women practiced in colonial Congo. The nature of sex work especially demands closer attention than biomedical

researchers have given it, because unlike prostitution in European cities -- characterized by procurers, sex houses, and high turnovers -- Kinshasa's pre-World War II "prostitution" involved sexual, affective, and domestic services to a few regular African and European customers in exchange for money, shelter, and food.

Nevertheless, folding these practices under the term "prostitution," as Amandine Lauro points out in her work, is a misnomer that reflected the colonial authorities' ignorance of African urban life as well as their metropolitan obsession with the "venereal peril." In the late 1920s, alarmed by what they perceived as endemic "prostitution," colonial authorities ruled it a moral, health, and criminal matter. They suspected that sex traffickers had set up "*maisons de passe*" (unregulated brothels) in African settlements, but lacked the means to ascertain the brothels' existence or to conduct widespread police operations. Instead, they registered single women ("*filles publiques*") and rounded them up for regular medical exams (Lauro 2005).

We will bring critical analysis to colonial sources and mine other sources that have gone unexploited in biomedical studies of HIV emergence. Until now, researchers have based their arguments on a narrow range of sources (mostly published colonial records and official reports), using these sources to confirm their claims, entirely neglecting the context of their production, and as a result, uncritically reproducing their narratives. Along with a critical reappraisal of these sources, we will investigate other colonial archival resources linked to the day-to-day management of the city, i.e. police and confidential administrative records. Such sources can offer new insights into colonial urban development, gender imbalances, sex work, and patterns of mobility including labor migrations.

Finally, we will consult new sources that can illuminate important cultural changes, specifically Kinshasa's gender revolution in the 1940s and 1950s, the critical yet unstudied years of HIV's early emergence. This investigation may offer new clues to early HIV mortality patterns. For example, Gondola's studies of 1940s and 1950s Kinshasa suggest that young free women (*femmes libres* or *ndoumba* in Lingala), empowered by their newfound economic and social status, reveled in fashion, fête, and friendship through recreational associations and nightly sorties in Kinshasa and Brazzaville's most

popular beer halls (Gondola 1997; Gondola 1999). Significantly, they also frequently died at young ages of mysterious illness. Contemporary popular lyrics and newspapers offer insight into these new *femmes libres*, and their role in reshaping sexual norms especially in Kinshasa..

Our critical analyses and attention to new sources will lead to a more nuanced, precise, and historically grounded appreciation of the role of urbanization, prostitution, and colonial rule in HIV emergence. Shedding light on Congolese social practices of urban life and their (mis)interpretations by colonial authorities, our investigation will challenge prevailing simplistic assumptions that reproduce, rather than question colonial visions of African “detrribalization,” “social breakdown,” and “sexual promiscuity.”

3) The Emergence of HIV/AIDS in Portuguese Africa

Research on Portuguese Africa for this project will focus on the emergence and spread of HIV in Guinea-Bissau (Portuguese Guinea) and Lunda-Norte (Angola) during the colonial period. A better understanding of HIV-2 emergence in Guinea-Bissau is crucial because this virus developed independently from HIV-1. The independent emergence of HIV-2 thus casts some doubt on suggestions that AIDS resulted from the virus’s random mutation. Evaluating closely the conditions under which HIV-2 emerged in West Africa will illuminate both similarities and differences from HIV-1M emergence in central Africa. In addition, the role of mining companies and their “panoptical” health services for the early spread of HIV-1 in Angola and the Democratic Republic of Congo (DRC) will significantly add to our insights into the HIV-1 pandemic. This investigation is important because to date, researchers have advanced only simplified representations of the emergence of HIV-2. The main goal is to examine systematically the role of war and iatrogenic factors in the beginnings of the epidemic outbreak of HIV-2 in Guinea-Bissau, as well as the role of the mining industry in disseminating HIV-1 across the colonial border of Angola and the Belgian Congo.

Research to date about HIV-2 emergence in Guinea Bisseau usually refers to general “factors” (colonial biomedical practices, migrations, and war) that produced an epidemic (Poulsen, 2000). The

proposed research in this project will answer questions more concretely and intricately about the relations between various historical actors in the historical process of colonialism. To remedy shortcomings of these previous broad-brush depictions, the research on Guinea-Bissau and Angola will examine archives in Portugal— for example military and secret police archives in Lisbon, the archives of Diamond Company of Angola (Diamang, 1917-1975) in Coimbra, Portugal — as well as local archives in Lunda, Angola, and Guinea-Bissau, plus securing of oral testimonies from historical actors, particularly ex-health workers, traditional authorities and elders of the communities in Guinea-Bissau where sleeping sickness campaigns were especially intense.

The findings will provide better answers to questions about the emergence of HIV-2 in Guinea-Bissau and the techniques employed in mass injection campaigns, drugs used, and the availability and sterilization methods of needles and glass syringes since the beginning of colonial medical services. In addition, information will be sought on pet keeping, hunting, and consumption of bushmeat by several ethnic groups. In Angola, research will focus on details of vaccination and blood transfusion and surgeries, prostitution, the movement of Angolans to Zaire (post-1960), and the use of its medical services, all of which played a significant role in the spread of HIV-1.

By following the models of more rigorous historical and cultural analysis done in other African colonies and countries (Lyons 1992; Bell 1999), this research will help contribute to a thorough and critical evaluation of factors facilitating HIV-1 and 2. Both in the northern areas of Guinea-Bissau and in the diamond area of northern Angola are perfect sites to study the role of war, migration, prostitution, iatrogenic transmission via ~~en~~ mass health campaigns, and blood transfusion in catalyzing HIV-1 and HIV-2 emergence.

4) New Medical Interventions (injection campaigns and blood transfusions)

There has been important research in the past ten years on new medical interventions and their role in the emergence of HIV/AIDS. Lachenal's research in Cameroon (Pouillot, Lachenal, et al. 2008; Nerrienet, Pouillot, Lachenal, et al. 2005) as well as Jacques Pepin and his collaborators' work on

southern Cameroon, southwestern Central African Republic, and Gabon have shown how unsterile medical procedures during colonial public health interventions between 1910 and 1960 likely accelerated HIV transmission in African populations.

In addition, Schneider has shown that the history of blood transfusion in sub-Saharan Africa is a neglected but important development both for its role in expanding HIV-1M transmission and in adapting simian viruses into human ones. Blood transfusion is a highly efficient means of transmitting disease – nearly 100%, compared to sexual transmission or unsterile needle which ranges from 0.001% to 0.3% from contaminated persons, depending on their viral load. (Piot and Bartos 2002; Baggaley, et al. 2006) Indeed, no twentieth-century medical development permitted disease transmission more efficiently than blood transfusion. Practiced in sub-Saharan Africa as early as the 1920s, and regularly in some colonies including the Belgian Congo, blood transfusion in Africa began concurrently with HIV-1M's earliest adaptation. It likely facilitated the HIV epidemic by transmitting more contagious strains, and almost certainly by spreading the epidemic in the 1960s and 1970s (Hooper 1999; Schneider 2013; Rogan, et al. 1987).

Because of this scholarship to date, no funds are requested in this proposal explicitly for additional research on this question, except as researchers on hunting, urbanization, and Portuguese Africa turn up records on mass injection campaigns and transfusion. Instead, the research on these new medical interventions will focus on two questions. The first is how reliable are the findings on mass injection campaigns? Studies to date have not recognized that public health statistics were key to imperial propaganda, and as such, “their significance...was often either nonexistent or self-fulfilling” (Appadurai 1996). Attention to the errors and silences of these raw numbers is also crucial. Colonial historians of Africa have highlighted large-scale misdiagnoses, misconceptions, overreactions to certain epidemics, and the silencing of entire aspects of the disease burden (Dawson 1987; Vaughan 1991; Vaughan 1992). They require critical analysis to evaluate their precise meaning.

Moreover the focus on large scale campaigns, while productive, has obscured the role of more dispersed forms of daily hospital, missionary, dispensary, or informal health care. Such everyday, urban

and rural medical practices and investments, and lay experiences of them, may have had an important but overlooked role in shaping the present HIV epidemic. By examining these everyday medical practices, investments and experiences, our study will shed light on their contributions to HIV expansion.

The second question is how did blood transfusions in Africa expand HIV transmission and possibly facilitate the adaptation of simian viruses into human ones? Transfusion alone, of course, does not account for the adaptation of HIV viruses and subsequent spread. It remained relatively infrequent in the 1920s and 1930s in central Africa, and other means of viral transmission were simultaneously increasing: migration to urban and other work centers, expanded sexual relations, and large-scale injection campaigns using inadequately sterilized needles began in the 1920s and escalated in the 1940s (Pepin et al. 2008; Schneider 2009). Thus, for example, as with the expansion of the epidemic itself, HIV-1M's adaptation to human beings likely resulted from a combination of all these modes of transmission. The process may also have occurred over the course of years, even decades. Likewise, the later HIV-2 adaptations could have emerged from an entirely different combination of these developments.

This consideration of multi-faceted contextual influences will be the framework not only for analysis of the role of new medical procedures in the emergence of HIV/AIDS, it will also be the approach for assessing the interaction of all historical and cultural influences to be studied by the collaborative team including hunting and colonial rule, and urbanization, as well as developments in Portuguese Africa. This approach is in sharp contrast with the search for the “smoking gun” explanation that until now many biomedical researchers have sought. The result will be to shift explanations away from vague allusions to urbanization and from an obsession with African “behavioral changes” (especially sexual) associated with colonization or decolonization (Hahn, et al. 2000). It will enable us to show how these developments along with changes in medical technology and biopolitics are at the core of the HIV emergence narrative, and to stress that past and present HIV/AIDS must be understood within a wider political economy of disease (Packard and Epstein 1991; Dozon and Fassin 1989; Fassin 2006; Lock and Nguyen 2010).

B. History and duration of the project

William Schneider, who has conducted historical research on blood transfusion in Africa, began working with two prominent HIV/AIDS researchers, Preston Marx and Ernest Drucker in 2004. (Schneider and Drucker 2006) He subsequently teamed up with another historian, Guillaume Lachenal, whose research has focused on health campaigns against trypanosomiasis, leprosy, and medical research in colonial Cameroon. In collaboration with Marx, Drucker, and virologist François Simon, Lachenal and Schneider organized a 2010 international symposium, “Simian Viruses and Emerging Diseases in Humans,” (Lachenal, et al. 2010) which included historians and anthropologists, as well as virologists, epidemiologists, and clinicians working in Africa. After making a presentation on human mobility and hunting at that symposium, Tamara Giles-Vernick joined the collaboration, and shortly thereafter, Didier Gondola began to contribute his expertise on equatorial African urbanization, migration, and gender.

With planning funds from Indiana University, this core team surveyed existing scholarship; the team has one forthcoming article in a historical journal and a second under review in a scientific journal. The group also sponsored a May 2012 workshop in Nantes, France, attended by scientific advisers and three additional humanities scholars, who presented papers and have since joined the team: anthropologist and scholar of great ape hunting in central Africa, Stephanie Rupp; Amandine Lauro, who recently completed a dissertation on marriage and sexuality in the Belgian Congo; and Jorge Varanda, a Portuguese medical anthropologist with extensive field experience on medical interventions in Angola. (For bibliographic references, see Appendix.)

C. Staff

Team members joined this collaborative research in previous years, as we recognized that questions around HIV emergence required additional expertise. All team members, including scientific advisers, have participated in at least one of our multi-disciplinary research workshops/conferences.

William Schneider, Principal Investigator (Ph.D., University of Pennsylvania), is a Professor of History at Indiana University-Purdue University in Indianapolis. His many articles and monographs

include a book on the history of eugenics in France and an edited volume on Rockefeller Foundation funding of medical research around the world. The latter was an early example of directing collaborative research by humanities scholars. Since then he has also received large grants and directed collaborative research on the history of blood group genetics (jointly funded by NEH and NIH), the history of state legislation on eugenics in the U.S. (NIH Human Genome Institute) and a project currently underway on the history of Western medicine in China (Henry Luce Foundation). He has just finished a monograph on the history of blood transfusion in Africa.

Schneider will have overall responsibility for directing and coordinating the work on this project, whose funding will go through the Medical Humanities Program at Indiana University. He will also author sections on the role of blood transfusion in the adaptation and spread of the human viruses, based on existing records he has consulted and new material from records and archives found during the field work of other members of the collaborating team, especially in central and Portuguese Africa. He will devote approximately 10% of his time to work on the project, with compensation coming in summer to make up for work effort during the academic year.

Tamara Giles--Vernick is a researcher in the Emerging Diseases Epidemiology Unit at the Institut Pasteur in Paris. Trained in African history and anthropology at the Johns Hopkins University, she has conducted ethnohistorical research and published on hunting and other forms of environmental exploitation in the Sangha river basin of central Africa, as well as on global health, surveillance, influenza and emerging diseases. **Stephanie Rupp** is an Assistant Professor of Anthropology at Lehman College, City University of New York, who recently published *Forests of Belonging: Identities, Ethnicities, and Stereotypes in the Congo River Basin* (University of Washington Press, 2011). She is, at present, the sole researcher who speaks Bangando, the language of the ethnic community that had most significant interaction with colonial officials and markets in southeastern Cameroon, the simian source of the HIV-1M virus. She has previously worked with Tamara Giles-Vernick, exploring changing human-great ape relations in the Congo River basin, research that informs their current interest in histories of HIV emergence.

Giles-Vernick and Rupp will extend their collaboration to answer the historical questions concerning simian-human interactions, specifically in the Sangha River basin forest that connects southeastern Cameroon and the wider Congo River basin. Their time commitments will be concentrated in summers of 2014 and 2015 (100% for two months each summer for data collection) and approximately 5% at other times for writing and interaction with other team members. Any evidence that they collect on transportation and local migration, or on daily health practices, injection campaigns, or transfusion will be discussed with Gondola and Lauro, and with Lachenal and Schneider, respectively.

Didier Gondola earned his doctorate degree from the University of Paris VII. He is Professor of African History and Africana Studies at Indiana University – Purdue University, Indianapolis. He has widely published on popular cultures (music, fashion, gambling, and memory), gender and postcolonial issues in Central Africa, and the African diaspora in France. His first book, *Villes miroirs*, explored the social and cultural history of Kinshasa and Brazzaville. **Amandine Lauro** is a postdoctoral researcher at the Belgian National Research Council (FNRS) and at the Free University of Brussels. In 2009, she completed a Ph.D. in History on marriage and sexuality politics in the Belgian Congo during the interwar period at the University of Brussels. She has published on colonial prostitution, interracial sexuality, and gender in colonial Congo, and is currently working on a book manuscript, based on her Ph.D. dissertation, which includes chapters on prostitution in colonial Kinshasa. Her present research project focuses on race, sexuality, and colonial surveillance in Central Africa.

In collaboration with Gondola, Lauro will work on colonial transformations, including prostitution and human mobility. Drawing on her research expertise on prostitution and colonial rule in Central Africa, she will explore their influence on HIV viral emergence and their interactions with labor migration and changing gender relations in urban centers. She will draw from wide-ranging sources that she has already consulted, as well as new archival records in Belgian holdings. She will devote 8.25% of her time to the project. Gondola's main contribution stems from his interest in urbanization, gender issues, and changing sexual patterns in Kinshasa during what most scholars consider to be the likely dates of the earliest most recent common ancestor (MRCA), 1919-1945.

Jorge Varanda is a Postdoctoral Research Fellow at the Center for Research in Anthropology (CRIA) and at the Center for Malaria and Tropical Diseases of the Institute of Hygiene and Tropical Medicine (CMDT) both in Lisbon, Portugal. He has published on anti-sleeping sickness campaigns in colonial Angola as well as on colonial photography. He is completing a book on the health service of the chartered diamond company of Angola. Varanda is thus well qualified to conduct the research needed to examine the context in which HIV-2 emerged in West Africa, as well as an overlooked region south of the Congo River, where HIV-1 spread early on. He will devote 15% of his time to the project.

Guillaume Lachenal is Maître de conférences in the History of Science at the University Paris-Diderot. He has written extensively on colonial disease campaigns in Cameroon and will work mainly on new medical interventions in Africa in the twentieth century, especially injection campaigns. He is a junior member of the Institut Universitaire de France which will provide him support for the next three years to work on this project at approximately 5% of time.

Because of the scientific background necessary to understand the relevance of our historical and anthropological research, we have identified a scientific advisory group of virologists, epidemiologists, and evolutionary biologists, which has already worked with our collaborative team and will continue to be available to answer questions, to contribute to planning and discussions, to review publication drafts, and participate in the final workshop/conference.

Preston Marx, a virologist and Chair of the Division of Microbiology at the Tulane National Primate Research Center of Tulane University, conducts research on the evolutionary biology of SIVs. The discoverer of one of the HIV-2 subtypes in Sierra Leone, Marx originated the “serial passage” theory to explain the beginnings of HIV.

Ernest Drucker is an epidemiologist who has worked on the AIDS epidemic for thirty years. Together with Marx, he proposed serial passage theory and hypothesized the now accepted explanation that unsterile injections played a role in adapting the simian viruses to human transmission-

François Simon M.D./Ph.D. is a Professor at the Faculty of Medicine Paris-Diderot and Chief of the Microbiology department at Hospital Saint Louis in Paris. Professor Simon specializes in molecular

epidemiology, with particular focus on identification and characterization of HIV variant strains. He discovered the first cases of 2 HIV-1 strains and is the former Director of the Institut Pasteur in Dakar, Senegal.

In addition, expertise will be sought on molecular clock analyses of HIV emergence from a molecular evolutionary geneticist such as Paul M. Sharp, Professor of Genetics at the University of Edinburgh, or Oliver Pybus at Oxford, both of whom have previously collaborated with our group.

D. Methods

The methods used for this research will range widely, depending on the particular questions and scholars involved. Close analysis of archival records will constitute a significant part of our research methods, both to reconstruct past processes and practices and to evaluate critically the production and archiving of our sources so as to determine how and why they were written.

The best known, most accessible records, are in European colonial government archives. Along with a critical reappraisal of these documents, we plan to examine other archival resources that will illuminate daily life, government priorities and policies, rural administrative reports, and health reports (such as police and confidential administrative records), to develop new insights into colonial rule, its social consequences, and their implications for HIV emergence.

The French colonial and medical services in Cameroon, French Equatorial Africa, and West Africa kept records on hunting practices and policies, urbanization, prostitution, and African mobility. These records are held in the French National Archives in Aix-en-Provence and the Armed Forces Institute for Tropical Medicine in Marseille. Belgian colonial archives on Leopoldville/Kinshasa are located in the Ministry of Foreign Affairs in Brussels, the Royal Museum for Central Africa at Tervuren, the Institute of Tropical Medicine in Antwerp and the KADOC (Missionary archives) in Leuven. In Cameroon the National Archives in Yaoundé and municipal archives in Moloundou, along the Ngoko River also hold significant colonial documents.

Archives for Portuguese colonies in Guinea-Bissau and Angola are in Lisbon. Of special importance are Portuguese military and secret police archives, particularly for the civil war, sources previously used by Varanda. In Guinea-Bissau, the African Party for the Independence of Guinea and Cape Verde (PAIGC) held as much as two thirds of the country during the civil war (1963-74), governing it in parallel to the colonial state at a crucial time in the emergence of HIV-2. None of the biomedical publications on the spread of HIV-2 takes this development into account. Thus, it is of crucial importance to carry out oral history research to obtain more information about the provision of health care in these liberated areas. The archives of Diamond Company of Angola (Diamang, 1917-1975) in Coimbra, Portugal provide a rich source of records about local and expatriate communities, labor policies, and health interventions. By analyzing sexual transmitted infections, mass campaigns against sleeping sickness, tuberculosis and leprosy, vaccination campaigns, surgeries, and blood transfusions, it is possible to understand the intricate nature of daily life within this diamond mining bordering region, including night life and its inter-racial sex reality, as well as the porous reality of colonial frontiers.

Other private archives to be consulted include the records of the Congo Branch of the Belgian Red Cross (maintained by the Belgian Royal Archives in Brussels) and those of missionary societies active in the former French Equatorial Africa are in the Paris region. These private archives have been consulted by team members during previous research. While doing fieldwork in Africa, researchers will investigate national archives in Guinea-Bissau and Lunda, Angola. Other important yet untapped sources of information in Africa are local newspapers, theses and dissertations located at several universities and research centers in Brazzaville, Kinshasa, and Lubumbashi. Members of the research team will also determine whether other local medical records exist, especially in hospitals. It is likely that the team will be able to locate records for blood banks and transfusion services, and other records, such as those of clinics providing injections may also be found.

Anthropological fieldwork will be crucial for Giles-Vernick's and Rupp's research in central Africa, and for Varanda's in Portuguese Africa. All are experienced field researchers, having conducted oral histories and participant-observation with recent historical actors and those who hold and transmit

past knowledge of hunting traditions, songs, stories, and proverbs. Their recent work in their respective research areas provides them with active networks of subjects and research collaborators.

Published memoirs, ethnographies, and medical articles of the time will be extensively consulted, mostly for reinterpretation, because they have been mentioned in some studies already. Most of those citing these sources have done so uncritically, but humanities scholars trained in historical or African research will evaluate them in this project. There are also extensive collections of other sources, such as colonial photography and postcards at the Musée de l'Homme and the Congregation Saint-Esprit in Paris, which have been less utilized, but are potentially valuable for understanding the colonial period. The variety of sources and methods that the team will employ is one of the strengths of this project, given the interdisciplinary team.

Finally, we have built into the Work Plan of this research a series of meetings of the collaborative team along with selected scientific advisers.

E. Work plan

The overall Work Plan will be managed by Schneider. It will rely on periodic meetings of the collaborative team to plan research, assess progress, discuss the interpretation of our evidence in light of scientific research already conducted, and incorporate others' findings, where relevant. Prior to the publication of the final collaborative book, the project will culminate in a workshop in which we include additional members of the HIV biomedical research community. Individual team members will also consult with other team members and scientific advisers as needed. The periodic meetings offer opportunities for all team members to interact, and impose periodic deadlines for them to produce their analyses.

The specific plan, broken down by six-month periods and different research topics, is as follows: **January 1 – June 30, 2014.** An early meeting of research collaborators will be held in Indianapolis in February to go over the project plans, assess the starting points of team members, and consult with Marx and Drucker about any scientific questions. Varanda will begin archival research on Guinea-Bissau. Rupp

and Giles-Vernick will conduct archival research in French colonial archives and library holdings of older ethnographies and memoirs. Lauro and Gondola will likewise pursue research in Belgian archives. All will obtain necessary permissions to conduct research in African countries, including ethics and IRB approvals.

July 1 – December 31, 2014. Team members will conduct their initial research, including oral interviews in Guinea Bissau. Rupp and Giles-Vernick will make their first research trip to Cameroon and Central African Republic. Lauro and Gondola will assemble archival resources gathered for assessment and analysis.

January 1 – June 30, 2015. A second planning meeting will be held in February, this time in Europe (Paris or Lisbon). Team members will report on their progress and consult with European scientific advisers, Simon and Sharp. Varanda will continue interviews on Guinea-Bissau and begin them on Angola. Rupp and Giles-Vernick will make their second research trip to Cameroon and northern Republic of Congo. Translation, transcription, and analysis of field research will be ongoing. Lauro and Gondola will draft an analysis of prostitution in colonial Kinshasa.

July 1 – December 31, 2015. Team members will continue their research and in some cases present their findings. Varanda will conclude interviews in Guinea-Bissau and Angola, and begin writing. Rupp and Giles-Vernick will make their third research trip to Cameroon, northern Republic of Congo, and Central African Republic. Gondola will do fieldwork in Brazzaville and Kinshasa; Lauro will complete archival work in Belgian archives. A planning meeting will be held in November in New York, to assess final stages of research and to review plans for the concluding workshop to be held in spring 2016. We expect that team members will write and submit articles for publication on at least two research questions: great ape hunting, urbanization and prostitution, and Portuguese Africa. These topics necessitate more background research and will contribute to the collaborative publications planned for the end of the project.

January 1 – June 30, 2016. Final research will be conducted, as well as writing and preparation for publication of collaborative research. We will hold the final research workshop, tentatively proposed for

the Brocher Foundation in Geneva, Switzerland. The foundation has supported the initial planning and research on this question and has expressed interest in hosting our workshop, which will include our team and invited scientists specializing in emerging viruses. The two collaborative publications will be prepared by the end of this period: the book collectively authored by team members, and an in-depth article summarizing our research findings, to be submitted to a scientific journal. This latter publication is crucial to our goal of making available to the broader scientific community the historical analyses of humanities scholars.

F. Final product and dissemination

The following publications will disseminate the results of our research. First will be articles, published in appropriate journals, on the specific research questions outlined above: great ape hunting, urbanization and prostitution, and the emergence of HIV/AIDS in Portuguese Africa. Second, we will publish a synthesis of our findings on the overall question of HIV-1 and -2 emergence, drawing on contributions of all collaborators. This will be an article to be published in a scientific journal. In addition to adding to humanities scholarship on this major question in the history of medicine, one of our project's goals is to ensure that humanities scholarship is available to the scientific research community. This dissemination can most effectively take place through publication in a major scientific journal.

Finally, a jointly-authored book will be the main product that presents the detailed analyses and conclusions of our research. This volume will not be the usual edited volume that typically emerges from a conference, in which various scholars address a single, albeit loose theme. Rather, the book will contain several well-planned, integrated chapters, all written in conversation with team members and in consultation with scientists. The University of Chicago Press has expressed "keen interest" in the book manuscript we are proposing from this research. (See appendix.)

An NEH grant will offer the crucial support for our collaboration to pursue this significant historical research on HIV/AIDS, a disease that has affected the lives and experiences of tens of millions of people. At the same time, it will shed light on processes that facilitate the emergence new infectious diseases.