COVER SHEET FOR PROPOSAL TO THE NATIONAL SCIENCE FOUNDATION

PROGRAM ANNOUNCEMENT/SOLICITATION NO./DUE DATE
NSF 17-537 **07/20/2018**

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1844715

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University of Oregon Eugene

AWARDEE ORGANIZATION CODE (IF KNOWN)
0032235000

ADDRESS OF AWARDEE ORGANIZATION, INCLUDING 9 DIGIT ZIP CODE
University of Oregon Eugene
5219 UNIVERSITY OF OREGON
Eugene,OR 974035219 US

NAME OF PRIMARY PLACE OF PERF
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TITLE OF PROPOSED PROJECT
CAREER: Vernacular Knowledge, Expertise, and Ethics: A Case Study of Malaria Elimination in Zanzibar, 1900-2018

REQUESTED AMOUNT	PROPOSED DURATION (1-60 MONTHS)	REQUESTED STARTING DATE	SHOW RELATED PRELIMINARY PROPOSAL NO. IF APPLICABLE
$ 411,171	**60 months**	**09/01/2019**	

THIS PROPOSAL INCLUDES ANY OF THE ITEMS LISTED BELOW
☐ BEGINNING INVESTIGATOR
☐ DISCLOSURE OF LOBBYING ACTIVITIES
☐ PROPRIETARY & PRIVILEGED INFORMATION
☐ HISTORIC PLACES
☐ VERTEBRATE ANIMALS IACUC App. Date _____
PHS Animal Welfare Assurance Number _____
☒ TYPE OF PROPOSAL **Research**

☒ HUMAN SUBJECTS Human Subjects Assurance Number _____
Exemption Subsection **06052017007** or IRB App. Date _____
☒ INTERNATIONAL ACTIVITIES: COUNTRY/COUNTRIES INVOLVED **TZ SZ UK**
☒ COLLABORATIVE STATUS **Non-Collaborative**

PI/PD DEPARTMENT
Clark Honors College

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CO-PI/PD				
CO-PI/PD				
CO-PI/PD				

CERTIFICATION PAGE

Certification for Authorized Organizational Representative (or Equivalent) or Individual Applicant

By electronically signing and submitting this proposal, the Authorized Organizational Representative (AOR) or Individual Applicant is: (1) certifying that statements made herein are true and complete to the best of his/her knowledge; and (2) agreeing to accept the obligation to comply with NSF award terms and conditions if an award is made as a result of this application. Further, the applicant is hereby providing certifications regarding conflict of interest (when applicable), drug-free workplace, debarment and suspension, lobbying activities (see below), nondiscrimination, flood hazard insurance (when applicable), responsible conduct of research, organizational support, Federal tax obligations, unpaid Federal tax liability, and criminal convictions as set forth in the NSF Proposal & Award Policies & Procedures Guide (PAPPG). Willful provision of false information in this application and its supporting documents or in reports required under an ensuing award is a criminal offense (U.S. Code, Title 18, Section 1001).

Certification Regarding Conflict of Interest

The AOR is required to complete certifications stating that the organization has implemented and is enforcing a written policy on conflicts of interest (COI), consistent with the provisions of PAPPG Chapter IX.A.; that, to the best of his/her knowledge, all financial disclosures required by the conflict of interest policy were made; and that conflicts of interest, if any, were, or prior to the organization's expenditure of any funds under the award, will be, satisfactorily managed, reduced or eliminated in accordance with the organization's conflict of interest policy. Conflicts that cannot be satisfactorily managed, reduced or eliminated and research that proceeds without the imposition of conditions or restrictions when a conflict of interest exists, must be disclosed to NSF via use of the Notifications and Requests Module in FastLane.

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By electronically signing the Certification Pages, the Authorized Organizational Representative (or equivalent), is providing the Drug Free Work Place Certification contained in Exhibit II-3 of the Proposal & Award Policies & Procedures Guide.

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Is the organization or its principals presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency? Yes ☐ No ☒

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This certification is required for an award of a Federal contract, grant, or cooperative agreement exceeding $100,000 and for an award of a Federal loan or a commitment providing for the United States to insure or guarantee a loan exceeding $150,000.

Certification for Contracts, Grants, Loans and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:
(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, ''Disclosure of Lobbying Activities,'' in accordance with its instructions.
(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements and that all subrecipients shall certify and disclose accordingly.

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Two sections of the National Flood Insurance Act of 1968 (42 USC §4012a and §4106) bar Federal agencies from giving financial assistance for acquisition or construction purposes in any area identified by the Federal Emergency Management Agency (FEMA) as having special flood hazards unless the:
(1) community in which that area is located participates in the national flood insurance program; and
(2) building (and any related equipment) is covered by adequate flood insurance.

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(2) for other NSF grants when more than $25,000 has been budgeted in the proposal for repair, alteration or improvement (construction) of a building or facility.

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(This certification is not applicable to proposals for conferences, symposia, and workshops.)

By electronically signing the Certification Pages, the Authorized Organizational Representative is certifying that, in accordance with the NSF Proposal & Award Policies & Procedures Guide, Chapter IX.B. , the institution has a plan in place to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduates, graduate students and postdoctoral researchers who will be supported by NSF to conduct research. The AOR shall require that the language of this certification be included in any award documents for all subawards at all tiers.

CERTIFICATION PAGE - CONTINUED

Certification Regarding Organizational Support

By electronically signing the Certification Pages, the Authorized Organizational Representative (or equivalent) is certifying that there is organizational support for the proposal as required by Section 526 of the America COMPETES Reauthorization Act of 2010. This support extends to the portion of the proposal developed to satisfy the Broader Impacts Review Criterion as well as the Intellectual Merit Review Criterion, and any additional review criteria specified in the solicitation. Organizational support will be made available, as described in the proposal, in order to address the broader impacts and intellectual merit activities to be undertaken.

Certification Regarding Federal Tax Obligations

When the proposal exceeds $5,000,000, the Authorized Organizational Representative (or equivalent) is required to complete the following certification regarding Federal tax obligations. By electronically signing the Certification pages, the Authorized Organizational Representative is certifying that, to the best of their knowledge and belief, the proposing organization:
(1) has filed all Federal tax returns required during the three years preceding this certification;
(2) has not been convicted of a criminal offense under the Internal Revenue Code of 1986; and
(3) has not, more than 90 days prior to this certification, been notified of any unpaid Federal tax assessment for which the liability remains unsatisfied, unless the assessment is the subject of an installment agreement or offer in compromise that has been approved by the Internal Revenue Service and is not in default, or the assessment is the subject of a non-frivolous administrative or judicial proceeding.

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When the proposing organization is a corporation, the Authorized Organizational Representative (or equivalent) is required to complete the following certification regarding Federal Tax Liability:

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When the proposing organization is a corporation, the Authorized Organizational Representative (or equivalent) is required to complete the following certification regarding Criminal Convictions:

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Certification Dual Use Research of Concern

By electronically signing the certification pages, the Authorized Organizational Representative is certifying that the organization will be or is in compliance with all aspects of the United States Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern.

AUTHORIZED ORGANIZATIONAL REPRESENTATIVE	SIGNATURE	DATE
NAME **Stephanie Gray**	**Electronic Signature**	**Jul 16 2018 03:00 PM**

TELEPHONE NUMBER	EMAIL ADDRESS	FAX NUMBER
541-346-2220	**sgray10@uoregon.edu**	

PROJECT SUMMARY

OVERVIEW

This CAREER proposal will result in a series of closely-linked research and educational outputs centered around questions of history, ethics, and the role of vernacular knowledge in global health campaigns. Findings will contribute to the African Studies/STS literature about how to integrate vernacular knowledge into dominant epistemological frameworks and add to the postcolonial technoscience literature by doing ethnographically and historically informed research about the ethics of global health interventions. This project draws on STS frameworks while engaging with literatures on the anthropology of science and biomedicine. The PI will carry out archival, ethnographic, and oral research in Africa, Europe, and the US, drawing on 15 years of experience working in East Africa in the global health field.

INTELLECTUAL MERIT

The grant will support new research focusing on a century of malaria elimination attempts in sub-Saharan Africa and on the island of Zanzibar. The research will chart the global institutions involved, changes in disease environments, and risks that accrued to local communities. Based on preliminary research, four research themes have emerged. 1) African Vernacular Knowledge investigates how Zanzibari vernacular knowledge challenges biomedical epistemic frameworks on what makes malaria an "environmental" disease, what it means to eliminate a disease, and whether acquired immunity exists. 2) Governmentality and Expertise considers the role of the state, and citizens' relationship with the government in shaping their engagement with global health interventions. It is grounded in locally specific information, acknowledging social and political relationships and realities. 3) Postcolonial Global Health Ethics asks what happens in a place when an intervention ends: the kinds of risks that might be acknowledged by scientists but not be well understood by community members, and what responsible planning for the end of a project looks like. 4) Africa's Role in the Global Eradication Attempt critically reads the WHO's archival record to examine the 20+ "pilot" campaigns in Africa. It explores the possibility that these constituted a real and sustained effort to eliminate malaria on the continent, making the original use of the term "pilot" a strategic misnomer.

BROADER IMPACTS

Millions of people in the global south live in areas with endemic malaria, especially in tropical Africa. There are renewed efforts for global eradication, yet the overall framing and planning of these projects rarely engages with rich historical realities and local vernacular knowledge. This project will reintegrate African vernacular knowledge, African voices, and the long historical record into contemporary discussions dominated by global health organizations such as the WHO, CDC, and Gates Foundation.

This CAREER proposal has two primary educational broader impact goals: 1) to have female STEM majors at the University of Oregon *broaden* their understanding of what a scientist is to *recognize* the importance of history of science and social studies of science; and 2) to *expose* and *train* students to use social science research methods (primarily historical and anthropological) in their future careers. Key research/educational activities include: developing new STS/African Studies courses; running an undergraduate global health research group; hiring undergraduates to work as research assistants; serving as primary advisor for students writing undergraduate theses; and providing a year of mentorship for a post-doctoral scholar in STS/African Studies. My primary demographic for these educational activities is female STEM majors, though these activities will produce broader impacts for: students in the Honors College, students at the UO, local high school students, global health organizations and policymakers, and for the general public. Research findings will be disseminated in the form of a book, four articles, blog posts, conference presentations, invited lectures at universities, and student presentations.

The PI has the experience and expertise to carry out these research and educational activities: she is an award-winning teacher, has a strong track record of using past NSF support to publish articles and books, has involved students in research through data collection and in published articles. The PI's unique institutional appointment in the University of Oregon's Clark Honors College offers exceptional opportunities to integrate research with teaching and to reach female STEM majors.

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For font size and page formatting specifications, see PAPPG section II.B.2.

*Proposers may select any numbering mechanism for the proposal. The entire proposal however, must be paginated. Complete both columns only if the proposal is numbered consecutively.

CAREER Proposal: Vernacular Knowledge, Expertise, and Ethics: A Case Study of Malaria Elimination in Zanzibar, 1900-2018

This CAREER proposal will result in a series of closely-linked research and educational outputs over the five year grant cycle centered around questions of the history, ethics and role of vernacular knowledge in malaria elimination attempts over the past century. Though the research focuses on the island of Zanzibar, the findings are relevant to ongoing malaria-elimination attempts globally. The grant will support new research in four key areas: Africa vernacular knowledge, governmentality and expertise, postcolonial global health ethics, and Africa's role in the global eradication attempt. Activities in this CAREER award include intensive training and mentoring of female STEM undergraduates at the Clark Honors College at the University of Oregon. These grant activities will expose them to fields such as the history of science and social studies of science, and historical and anthropological methods as a way to challenge and broaden their understanding of what scientists do, and the role alternate forms of knowledge can/should play in scientific inquiry. The project takes advantage of my unique abilities to effectively involve undergraduates in my research, and will allow me to continue several innovative new programs I have piloted.

The grant will result in a monograph and four articles in STS, history, and global health outlets; 3 new classes on STS/African Studies topics estimated to reach 500 students over 4 years; the establishment of a weekly global health research group for approximately 35 talented students to be closely mentored while producing undergraduate theses; and the hosting and mentoring of a post-doctoral fellow in STS/African Studies. Some of the innovative ways students will be involved in the research include: doing archival work with me at the WHO archives in Geneva; reading draft book chapters and working with my raw data (archival documents, oral interviews, maps, photos, epidemiological reports) in each of the three new classes I develop; having access to my data to write their own undergraduate theses; being hired as one of 10 undergraduate research assistant (RA); and for those RAs, the opportunity to co-write conference papers, blog posts or peer-reviewed articles. In order to accomplish these goals, this proposal requests two summers of support to conduct ethnographic and archival research in Zanzibar and Europe, and one course release per year to allow me to coordinate all educational components while producing scholarly articles and book chapters.

The results of this research will inform three main areas within the social studies of science and history of science: 1) contributing to the growing area studies literature in STS, in this case, African Studies. But more specifically, engaging with debates about how to integrate vernacular knowledge. 2) adding to the postcolonial technoscience literature that is ethnographically rich, while acknowledging ethical questions that are historically salient. 3) considering the STS literatures on expertise, governmentality, and institutions. I draw on STS frameworks from the social studies of science, history of science, and history of medicine while engaging with the substantial literatures on the anthropology of science and biomedicine.

Introduction

In comments made in 2011 at the Gates Malaria Forum, Melinda Gates rightly noted that, "Zanzibar had an up-and-down history with malaria...[and that] the malaria burden in Zanzibar oscillated like a sine wave." This observation suggests an interesting and challenging set of questions about this up and down history, the possibility of progress on malaria elimination, and the costs of attempts that do not result in actual elimination. What are the larger effects from

such an up and down history, one characterized by progress and regress? There has been no real study/inquiry into how that up and down has changed the disease landscape of malaria. How has it shaped individuals' susceptibility and risk? How does it shape/change individual communities' risks? How has this up and down history shaped peoples' understandings and willingness to participate in contemporary malaria elimination campaigns?

The primary field site to investigate these questions will be the Indian Ocean island of Zanzibar. Zanzibar plays a unique role in this larger global discussion about the feasibility, success and history of malaria elimination attempts: it is an island sentinel in the Indian Ocean, long beckoning foreign scientists with the promise of successful malaria elimination in tropical Africa. Since the early 1900s, this East African island has been used as a natural laboratory for malaria control measures by a host of international scientists. Zanzibar has been idealized as the perfect site for elimination attempts due its island ecology, small size, endemic levels of disease, a relatively small population, and relatively stable political climate. Initial efforts by the British protectorate government through the 1950s focused on environmental control and centered on mapping mosquito breeding sites, destroying mosquito habitats, and a few cases of mass drug administration. The WHO's campaign in the 1950s focused on indoor residual spraying, and the most recent Gates-funded interventions have emphasized insecticide treated bed nets and digital systems for tracking malaria cases.

Although a small place, the island has been, and remains, at the center of global malaria elimination efforts. Current descriptions of malaria on Zanzibar describe the disease as "nearly eliminated" with prevalence of less than 1% on parts of the island. Zanzibar is frequently invoked as an example of malaria conquered in tropical Africa. Yet, as with many appealing stories, this one is not quite true. In fact, not a single program in Zanzibar over the past century has eliminated malaria. Malaria has been *nearly* eliminated multiple times, which is the same as saying it has never been eliminated. The mosquito vector and malaria parasite remain entrenched in the local environment and local bodies. Over the past hundred years, malaria rates have plummeted and then rocketed back up at least three times, with prevalence rates in children ranging from 75% to under 5%. Countless campaigns have been launched in Zanzibar and certain themes are always raised in these opening salvos: malaria's imminent demise and how improved life will be once malaria is gone.

Malaria is uniquely terrible in that there are risks that accrue to local people when the disease is effectively controlled for a number of years and then allowed to return unchecked. A temporarily successful control campaigns can create a more dangerous disease environment by stripping people of their hard-won acquired immunity. Acquired immunity is gained only by being exposed repeatedly and regularly to malaria infections and surviving. This means that in endemic spaces, mortality is typically confined to children and adults suffer primarily from morbidity, though this is not a water-tight pattern (Griffin 2015, Langhorne 2008, Trape 2014). Yet acquired immunity can be lost if a person is not regularly exposed to malaria. A control program or elimination attempt that reduces malaria prevalence to near zero or temporarily stops transmission can create a situation ripe for rebound malaria—when malaria returns to communities where immunity has been lost and leads to extremely high mortality rates, even among adults. The realities, challenges, and ethical dilemmas of rebound malaria are not new—scientists were familiar with the concept and debated it back to the 1940s (Cohen 2012, Graboyes 2015, Dobson 2000, Webb 2001). Zanzibar's history with malaria elimination failures and deadly rebound epidemics is not in doubt (though it's been almost entirely unreported in the historical or global health record). Yet despite being the site of a failed WHO program in the late

1960s and a case of epidemic rebound malaria in the 1970s, those scientists working on the contemporary malaria elimination attempt are either unaware or dismissive of this history. My preliminary interview data from those working on the current elimination attempt shows that these men strip history from their activities (insisting there is no history, or that it's not relevant); dismiss vernacular knowledge (continuing to frame people as ignorant of biomedicine); ignore or minimize the failures of past interventions; and rarely—if ever—acknowledge the very real risks and ethical questions involved in only temporarily controlling malaria.

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This CAREER award comes at the right time to be transformative for my research, to allow me to build my skills and expertise in ways that speak directly to global public health in terms of potential changes in policy/practice, and to allow me to sustain a series of innovative educational activities I have piloted. Despite having spent only two years in the Honors College, I have fully embraced the College's ethos of innovative, research-oriented undergraduate education and in 2018 was named one of three recipients for the Ersted Award for Specialized Pedagogy, a prestigious university-wide teaching award. I have a strong research pipeline including a special issue of a journal that I'm co-editing on "Local Environments and Lived Experiences: Histories of Disease in sub-Saharan Africa," 3 other articles in preparation or under review, and an edited book volume that will be published in 2019. I have also developed effective and innovative ways to involve undergraduates in my research: employing research assistants, co-authoring a conference paper and peer-review article with an Honors College student, sending students to Zanzibar to conduct independent archival work, and developing an 8-week study abroad program in Zanzibar.

I also have a track record of effectively using NSF support. From 2006-2009, I received a NSF Graduate Research Fellowship, allowing me to earn both my Masters in Public Health with an emphasis on medical ethics and a Ph.D. in African history from Boston University. The award allowed me to spend more than 15 months in East Africa conducting research and from that initial rich period of field work I published the book *The Experiment Must Continue: Medical Ethics and Research in East Africa, 1900-2014* (Ohio UP, 2015), and 5 peer-reviewed articles on topics that broadly consider the ethics of relations between local communities and colonial and post-colonial institutional structures.

My faculty appointment, tenure home and teaching responsibilities are in the UO's Clark Honors College, not a specific department. The CHC is a liberal arts college of roughly 850 students within the larger university. These bright and ambitious students select a major from the university but take general education and elective courses in the Honors College (amounting to roughly 1/3 of their coursework). A majority of Honors College students are females, our largest number of majors are in the sciences, and women remain underrepresented in STEM fields. I teach 5 courses per year that are interdisciplinary and introduce students to the history of science, global health, and African Studies. My courses typically have a large majority (15+ out of 19 students) who are female STEM majors.

Intellectual Merit

Four research themes have emerged from preliminary research conducted in Zanzibar and Europe in 2017. I completed two weeks of archival work in the World Health Organization's Archives, followed by four weeks of field work in Zanzibar that included 10 formal interviews and days of observation in the main malaria elimination program offices, laboratories, and in peoples' homes. The months of summer support requested in this CAREER award will allow for

four months of research to be conducted and for these preliminary findings to be corroborated, refuted, or refined. There are four major themes: African Vernacular Knowledge, Governmentality and Expertise Postcolonial Global Health Ethics, and Africa's Role in the Global Eradication Attempt

1. African Vernacular Knowledge

An important contribution of this project will be to integrate African vernacular knowledge about malaria more fully into the history of science, the history of malaria elimination attempts, the history of global health interventions and current elimination activities. My preliminary data indicates that Zanzibari vernacular knowledge challenges many biomedical epistemic frameworks. This is clear in areas such as what makes malaria an "environmental" disease; what it means to eliminate a disease; whether acquired immunity exists; the risks and realities of rebound malaria; and how local communities make sense of current activities after a century of international malaria control and elimination activities.

Malaria is recognized to be a deeply environmental disease, where transmission patterns are highly sensitive to localized geographic conditions. In my interviews, people frequently began by referencing the *mazingira* (environment). People discussed how *mazingira uchafu* (dirty environments) led to more malaria, and noted that the goal of many malaria programs was to *weka mazingira usafi* (make a clean environment). People acknowledged the role of the *mbu* (mosquito) and how changes in the environment led to changed *mbu* (mosquito) behavior that resulted in changes in malaria severity. While statements of this nature from members of the lay public indicate a sophisticated and nuanced understanding of malaria as an environmental disease, other statements differ from biomedical and ecological framings. For instance, many people hint that the disease itself changes over time. As the environment is cleaned and ordered, it stops being "malaria" and becomes a distinct, less dangerous disease, one referred to as *homa za kawaida* (normal fevers) or *homa tu* (just a fever). It's been well documented across the continent that disease categories rarely align across space and time (Feierman 2000, Livingstone 2007). Specific to East Africa, malaria is often discussed as different diseases: *degedege* affects children, causes seizures, and results in death while *malaria* affects adults, causes fevers, and rarely results in death (Kamat 2008; Langwick 2007, 2011; Muela 2002; Gessler 1995).

This CAREER award will allow me to research other key concepts associated with malaria elimination efforts. I am especially interested in understanding whether people recognize the phenomenon of acquired immunity, which seems to fit uneasily into larger Swahili conceptions of the body, health, and healing (Beckerleg 1994, Parkin 2000, Gearhart 2013, Nisula 1999). "Immunity" does not have clear parallels in Swahili though there are related concepts of having "strong" or "weak" blood that often corresponds to overall health and vitality (Graboyes 2015). If acquired immunity does not factor into local idioms of health, it's unlikely the "risk" of lost immunity is shared. Many studies across Africa have established that risk is a culturally dependent category and more broadly that conceptions of risk may be linked both to "modernity," changing relationships with technology, and changing perceptions of the environment (Allen 2002; Beck 1995; Douglas and Wildavsky 1982; Harthorn and Oaks 2003; Hays 1992; Lash, Szerszynski and Wynne 1996; Lupton 1999). Divergent perspectives about what constitutes risk raise important ethical questions addressed later in this proposal: how can communities be appropriately engaged—consenting to interventions, understanding risks?

My focus on African vernacular knowledge draws on work by Mavungha (2018) and Tilley (2011). Mavungha re-integrates African vernacular knowledge in the realm of the *mhesvi* (tsetse fly) in Zimbabwe, showing the value in privileging African epistemic categories rather

than European or biomedical ones. Tilley shows how African vernacular knowledge was rarely acknowledged and integrated into official colonial accounts across the continent, even when broadly inter-disciplinary "ecological" approaches were being used. I will also engage with the literature on the indigenous/scientific knowledge divide through works on traditional knowledge in various settings (Agrawal 1995, Fairhead and Leach 1996, Cetina, 1999).

2. Governmentality and Expertise

This theme more fully considers the role of the state, and citizens' relationship with the government in shaping their engagement with global health interventions. It is grounded in locally specific information, acknowledging social and political relationships and realities. Preliminary research in Zanzibar indicates that how citizens assess and engage with global health campaigns are modulated by larger citizen-state relationships and the mis/trust citizens have in government. Residents' impressions of government and its role in their lives also colors how people think about the role of "experts" and "expertise."

In interviews, people frequently collapsed international actors and different agencies into the broad, generic, category of *serikali* (government). They went on to question the motivations, intents and goodwill of the government and the veracity of the "malaria is under 1%" statistic. Some simply stated they didn't trust information from the government, others hinted at global entanglements of knowledge, expertise and funding and how that may challenge government claims to "success." Statements such as: "the government tell us it's a success otherwise donors will be angry"—acknowledged Zanzibar's dependence on foreign aid not just for malaria, but in general. Another man, commenting on diagnostic spaces, pointed out the tension with the government so publicly proclaiming malaria rates were under 1%: "when you go into a clinic…you won't be tested for malaria even if you have symptoms, even if you ask for a test, since no one wants to find malaria cases." Although none of these men mentioned it explicitly, the skepticism is firmly rooted in more than a century of international malaria interventions often shrouded in mis-information and claims of success that ultimately ended with the return of malaria. The archival record makes clear that during the WHO elimination attempt (1957-1968), activities continued even in the presence of widespread pessimism from WHO scientists. Depending on ones dis/trust in the government and skepticism of international power dynamics and funding norms, there are real reasons to question the authenticity of the statistical success that's being touted in Zanzibar.

There are a few important areas for additional research. First, more needs to be known about how local people understand the role of experts (international and local), how different types of experts are being collapsed into generic groups, and how people link experts and government. Second, to more closely examine how the "experts" involved in the elimination activities believe they are understood. The experts interviewed so far were unwilling to acknowledge how closely they are linked to government in the public's mind. In addition to interviewing, research in the Zanzibar National Archives (in Swahili language newspapers and government documents) will also help shed light on both of these questions. There is also strong historical literature in Zanzibar related to politics and government relations that will help contextualize the malaria elimination attempt (Fair 2001, Glassman 2011, Sheriff 1987).

There are multiple sets of literature that will help to theoretically flesh out this area: postcolonial technoscience, anthropology of science and biomedicine, and writings on expertise. Benton's work on citizen-state relationships in West Africa and "vernacular accounting" documents histories of mistrust and acknowledges how people may challenge official forms of statistical knowledge (2015, 2012). Anthropological work by Abramowitz on global responses to

ebola in West Africa documented the variations in how communities can understand the same intervention (2017). There are many overlaps between postcolonial technoscience literature and that of critical anthropology. Biehl and Petryna's edited volume (2013) places people at the forefront of larger science studies questions, imbuing them with ethnographic depth and detail, rooting findings in a particular place and time. Anthropological works by Geissler, Kelly, Tousignant, and Lachenal pay close attention to the historical landscape, material remains and memory (Geissler 2013, 2014, 2016; Beisel 2013; Kelly 2011; Lachenal 2016). There are also excellent historical works: Webel's (2014) work on sleeping sickness emphasizing the importance of political relationships, those focusing on "historical epidemiology" (Giles-Vernick and Webb 2013), and Nash's (2006) work on how new forms of expertise such as medical geography and germ theory shaped understandings of malaria in the American West. In the abundant literature on expertise, Leach, Scoones, Wynne's edited volume on public understanding of science (2005), Ottinger's work on public understanding and monitoring of air quality (2009, 2010), and Mitchell's examination of techno-politics in Egypt (2002) have proven particularly useful to date. While recognizing differences in local knowledge and global science, I will be attentive to the constructed and limiting nature of those categories (Verran 2014, Osseo-Assare 2014, Langwick 2011).

3. Postcolonial Global Health Ethics

Global health projects bring with them a set of important ethical questions related to community involvement, risks, and acknowledging the true lifecycle of an intervention. The postcolonial realities of flows of money and expertise from the global north to the global south, the artificiality of funding cycles, the precarity of successes, and a refusal to acknowledge the afterlives of a project—these may appear as defining features of our contemporary, neoliberal, landscape. But these questions and patterns deserve to be historicized, and in fact have many historical precedents. These large concerns can also be condensed to a set of fairly simple questions: What happens in a place when an intervention ends? What kinds of risks might be acknowledged by scientists but not be well understood by community members? What does responsible planning for the end (or even failure) of a project, look like? These questions resonate across all areas global health where sustained funding is challenging and where changed disease ecosystems can increase local risk.

Though these issues pertain to nearly all global health programs, focusing on a case study of malaria elimination attempts in a single place over time reveals with striking clarity what is at stake. When malaria elimination and control activities are temporarily successful—reducing or halting disease transmission—it can strip people of their hard-won acquired immunity and create a situation ripe for epidemics of rebound malaria. These epidemics typically have high mortality rates, even among adults (Griffin 2015, Langhorne 2008, Trape 2014). Thus, attempts to eliminate malaria raise the specter of rebound malaria. Epidemics of rebound malaria have been documented globally yet rarely get the attention they deserve. Seventy-five cases of resurgent malaria have been identified in 61 countries between the 1930s and 2000s and "almost all" of the cases were caused by the weakening of malaria control measures, most frequently "funding disruptions" (Cohen 2012).

The risks of temporary success, or outright failures, have been known for decades. Scientists involved in malaria control in Africa have debated the risks, benefits and ethics of lost acquired immunity back to the 1930s (Dobson 2000, Corbellini 1998, Graboyes 2015). In Zanzibar, the archival documents make clear that the experts involved in planning and leading the WHO's activities knew rebound malaria was a threat. Yet information about the risks were

not shared with islanders, no planning was done for the end, and measures were not taken to protect people as malaria steadily returned. How these issues of risk, sharing of knowledge, adequate planning, and ultimately preventable death, were handled is an important and undocumented part of the historical record. But the rebound epidemic in Zanzibar, and the ethical questions that preceded and followed it are not unique to this Indian Ocean island—they are the same question that vex malaria control activities globally.

One expression of the afterlives of projects is how past activities are remembered in the communities where they take place, and by the organizations involved. In preliminary interviews with six Zanzibari men employed by the current elimination program, none expressed any knowledge of the failed elimination attempt of the 1960s and the rebound epidemic that followed. They were all optimistic that the current campaign would not run into the same problems (though they didn't know what those problems were); that whatever bad things had happened in past campaigns had been remedied (though they couldn't say how); and that fears about rebound epidemics of malaria were unrealistic (while ignoring Zanzibar's own rebound epidemic). The inattentiveness to history and past failures extended to global malaria experts. During a 2017 conversation with a leading CDC malaria expert, I asked how the CDC "plans for the end" considering the risks of rebound epidemics. He dismissed the question, stated that accounts of rebound malaria were "overblown," the risks minor, and the historical case studies "not relevant." A goal of this project is to reach out and speak to global health experts in convincing ways, showing how history might provide useful insights into current activities, and emphasize the enduring nature of many of the ethical dilemmas.

The literatures informing this topic cross STS, anthropology, history and global health. Abramowitz (2016) has written on the effects of large *Médecins Sans Frontières* (MSF) projects ending in Liberia, and some of the unintended ripple effects across society. Crane's work has been critical in pointing out how superficial many international "partnerships" actually are, how African knowledge and contributions are often devalued in international science, and how the ending of projects are linked to international funding cycles and decisions made in the global north (2013, 2018)—all arguments echoed in Okeke's recent piece on the fragility of global health partnerships (2018). The ethics of global health interventions have been considered broadly from the perspective of humanitarian interventions and the work of groups such as MSF (Redfield 2013), narrowly as a series of practical case studies meant to inform contemporary debates (Aellah 2016) and more narrowly still on questions particular to malaria research (Jamrozik 2015, Kilama 2009, Ndebele 2012). Future research on this topic will investigate more carefully the importance of space and place. This point has not yet come up in interviews, but I will listen carefully and be attentive to where scientific knowledge is produced, the different ethical norms of particular spaces, and the challenges of traveling with scientific knowledge and technology into places far removed from the site of production (Gieryn 2006, Hayden 2007, Lefebreve 1991). I will also be skeptical of neatly bifurcated categories of North/South and particular about the places where knowledge is made (Pollock 2014).

4. Returning Africa to the Global Malaria Eradication Attempt

In the mid-1950s to early 1960s, more than 20 different WHO pilot projects attempted to eliminate malaria in Africa as part of the global eradication attempt (Molineaux and Gramiccia, 1980). The WHO called these attempts "pilot" programs, and historians writing since then, most notably Packard (1998, 2007) and Webb (2001, 2014), have for the most part chosen to adopt the WHO's terminology. This part of the project critically reads the WHO's archival record to explore the possibility that the original use of "pilot" was a strategic misnomer and historians'

use since then has been a mistake. This section fully examines the 20+ campaigns in Africa and whether they constitute a real and sustained effort to eliminate malaria on the continent.

The WHO's work in Zanzibar ran from 1957-1968, and the program came vexingly close to eliminating malaria before it was abruptly cancelled by the Zanzibari revolutionary government. The public cancellation came after years of WHO scientists privately predicting and lamenting the understood-as-inevitable "failure" of elimination on the island. The cessation of the campaign led to rising malaria rates and an epidemic of rebound malaria in the 1970s. Even though the rebound epidemic is widely referenced in technical malaria reports, no article, book chapter, or book has adequately documented it. This section of the project will reconstruct the epidemic, putting archival sources in dialogue with newly collected oral sources capturing the lived experiences of Zanzibaris and international experts.

Research completed to date indicates that while the WHO's public statements named these as "pilots," private memos showed that the WHO ran these programs just as they ran other "real" elimination attempts; Africa was not "forgotten" or "left out." They funded them well over a period of years, sent their best experts, filled out the same reports, and engaged with the epidemiological data in the same ways. Although the project's primary focus will remain on Zanzibar, my analysis will broaden to consider the other malaria elimination attempts made across sub-Saharan Africa through archival materials. I've already written on the Pare Taveta Malaria Scheme in Kenya and Tanganyika (Graboyes 2014, 2015), and will draw on the extensive WHO records in the archives in Geneva. There is a rich secondary literature to provide comparative examples from other continents that have highlighted the roles of institutions, the challenges facing areas with endemic levels of malaria, and the risks of rebound malaria (Cuento 2007, Packard 2007, Webb 2009, Chapin 1981, Snowden 2006, Yip 2009, Kamat 2000, Packard 1982, Sharma 1986).

Methodology and Sources

Doing historical research on the African continent means constantly confronting source limitations and finding creative ways to fill gaps in the documentary record while critically reading that which has been produced. Working with the archival record in Africa means being attentive to the production of knowledge and reading materials critically. This means recognizing who produced information (almost always European male colonizers, occasionally missionaries, less frequently Africans), whose voices and experiences were systematically ignored or excluded (women, children, slaves), and under what systems the information was produced. This proposal acknowledges those gaps in the colonial archival record and thus searches out other forms of knowledge in the form of oral sources and ethnographic observations, taking a multi-disciplinary and mixed methods approach. With the integration of archival, ethnographic, and oral sources, it is likely that the materials will often present "fact" in different ways. I will work carefully to triangulate between the different sources and note spaces of slippages, discontinuities, or contradictions. This project will contribute to what Hecht and Breckenridge call the "political work that the history of technology, perhaps especially in African history, performs through absences and voids" (Serlin 2017).

I have already begun research on this project, and my preliminary findings have been based on a combination of archival, oral, and ethnographic data. Methodologically, I will continue with the techniques I used in my first book, which moved from the synchronicity of the ethnographic record to deeper histories. While I am attentive to chronologies, political breakpoints and locally meaningful timelines, I am as interested in charting continuities over time as I am in pointing out disjunctures. I am extremely attentive to the challenge of having

different types of data speak to each other, and the limitations of relying on just a single set of materials. As a historian, I am limited when there is no way to capture what happened on the ground beyond assuming what was written in official plans and reports was what occurred. In ethnographic research, limitations arise when assuming that what actually did happen, and was observed, was the actual plan without enough grounding in the archival record. By combining both types of data, and integrating oral evidence gathered from Zanzibar, the stories become more nuanced, complicated, accurate, and multi-dimensional.

In all of my data, I have been careful to consider linguistic analysis of Swahili in written and oral form. In formal interviews, overheard conversation, and in formal documents, I have begun to gather examples of Swahili terminology, language choices, and reference points when discussing malaria. I'm particularly interested in hearing how people narrate the risks/benefits associated with malaria control, how people express their views of global health activities, and how local categories of disease and sickness map onto biomedical boundaries. In examples I've collected to date, Zanzibaris narrate malaria control in strikingly different ways than global health experts do and I anticipate this linguistic lens to shape the analysis of my data.

Oral Sources. My interviews consist of a single semi-structured discussion in Swahili lasting 45-60 minutes. I conduct them either independently or with the presence of a Swahili-speaking research assistant. The interviews will focus on understandings of lived experiences with the disease, how malaria is an environmental disease, perceptions of the severity of malaria over time, memories of specific interventions and campaigns (such as spraying, mass drug administration, distribution of bednets), and impressions of the current elimination activities. The first part of the interview focuses on lived experience with malaria and seeks to reconstruct locally meaningful disease categories and experiences drawing on the frameworks established by Kleinmann (1981,1988) and Good (1994) while also recognizing the constructed nature of disease categories (Arnowitz 1998). Developed relationships with some interviewees will allow for follow-up, more in-depth oral histories taking account of the interviewee's full life experiences.

Interviewees will be identified in two different categories: those directly involved with malaria efforts who could be considered an "expert," and Zanzibaris on the receiving end of interventions, broadly construed as the "lay" public (though many of them would have personal experience with malaria). I will do approximately 60 interviews total, 30 with each group, tending toward Zanzibaris who would have lived experience with the rebound epidemic of the 1970s. I will identify and recruit people to interview by drawing on my existing networks in Zanzibar; observing in laboratories and clinics where malaria tests are given and recruiting participants; observing in communities where malaria elimination activities (indoor residual spraying) is occurring and seeking to interview those whose residences are being spayed. In all cases I will also solicit names from those I have already interviewed using a standard snowball approach. Interviews will be carried out in the main city and a selection of villages across the island, looking for a balance of urban, peri-urban, and rural responses. I will interview both men and women, though I expect to have a larger sample of men since they are better represented within the "expert" demographic, and upon entering households, many men would position themselves to be interviewed. I will search out female interviewees in more dedicated female-only spaces, and may also rely on same-sex focus groups as a way to integrate female perspectives.

I will also conduct focus groups in Zanzibar with both malaria professionals and the lay public that will be homogenous (experts, public, women-only) and also mixed. My intention with

the focus groups is to see how Zanzibaris respond to competing narratives or interpretations of past events since there have been significant variations in how experts and the lay public have remembered/assessed past malaria control activities. Depending on how willing women are to be interviewed in household settings, gender-specific focus groups may allow women to speak more openly and express opinions that differ from their husbands. I anticipate a Zanzibari research assistant will run the groups to allow me to fully observe and ask follow up questions.

During archival research trips to Geneva, London, Atlanta, and New York I will also work to arrange interviews with international malaria experts who have experience in Zanzibar or on malaria elimination activities more broadly. I have already identified the names of many of the key international experts who I will contact.

All transcripts from the interviews and focus groups will be transcribed into Swahili by a native speaker and I will be responsible for coding and doing translations into English. For interviews conducted in English, I will be responsible for transcription and coding.

Observation. During my four months of summer research, I will spend a period of weeks directly observing malaria elimination activities in various settings around the island. I anticipate observing indoor residual spraying in multiple communities and speaking with the sprayers; shadowing workers tasked with tracking suspected malaria cases; and spending time in public and private clinics where people potentially suffering from malaria are triaged, tested and treated. The goal will be to understand ongoing elimination activities from a variety of perspectives: how workers experience the labor of spraying and tracking suspected cases; how households understand the spraying activities; and how sufferers navigate diagnostic and treatment systems.

Ethnographic research comes with a deep literature about positionality, subjectivity, and feminist analysis. Particularly significant works coloring my own thinking about my role as a researcher include those by Harding (1994), Pigg (2013), Haraway (1988), and Madison (2005). While conducting research, I am fully aware of my privileged position as a white, wealthy, educated foreigner, but also of the limitations of my position as a young woman working independently. I will employ a male research assistant, likely one older than me, as a way to help enter spaces and facilitate conversations that may be harder for me to socially/culturally access without a male presence. I have received initial permissions for observations from the relevant agencies in Zanzibar, and final approvals will be gained upon return to the island with specific requests about where and when I want to observe.

Archival Sources. Archival sources used for this project include primary sources in the Zanzibar National Archives, the World Health Organization Archives, the Public Records Office in London, CDC Archives in Atlanta, and the UNICEF Archives in New York. The Zanzibar National Archives include items such as newspapers, scientific reports, and personal memos and letters in English and Swahili—but they are incomplete archival materials, which necessitates a trip to the Public Records Office in London. The WHO Archive includes a rich set of materials that range from published reports to confidential memos, raw data, maps, and technical reports about equipment and specific interventions. At the UNICEF archive I will work primarily with materials on how the organization supported the WHO's work in Zanzibar in the 1950s-1960s, and how they critically questioned the wisdom of continuing interventions when elimination seemed doubtful, and how they raised ethical questions about the risks of rebound malaria. At the CDC archive, I will look more carefully at efforts in the 1980s that led to another increase in malaria levels on the island, and particularly some of the flawed scientific assumptions undergirding the work. All of these sources will be read attentive to who is doing the writing,

why, the intended audience, and who/what is likely excluded. The documents will be analyzed critically, with an openness to coming to different conclusions than those currently accepted.

There has been a vibrant literature on how postcolonial technoscience can be informed by an area studies approach. Anderson has written extensively on the role of South East Asian Studies within STS, even "trying to re-imagine science studies as a form of area studies" (2009). This postcolonial approach entails critically viewing the globalization of science, while still paying attention to local histories and situated knowledge, and integrating heterogeneous sources (Anderson 2014). This approach recognizes that while science, technology, and biomedicine travel, but focuses more on local agents and examples of how new science was appropriated, adapted, transformed, or rejected, highlighting the agency of local communities and individuals. It relies on a dense engagement through anthropological and historical sources and methods, which has long been a hallmark of African Studies.

The project has been approved by the UO's Institutional Review Board (#06052017.007) and received research clearance in Zanzibar through the Chief Minister's Office.

Plan of Work and Outcomes.

Pre-award Period: I have already completed six weeks of field research in Zanzibar and archival work at the WHO archives in Geneva.

Summers of Year 1 and 2 are devoted to 4 months of ethnographic and archival research in Zanzibar and Europe. All future activities will be based on this period of data collection. In Zanzibar I will conduct interviews and observe malaria elimination activities. At the WHO I will work through additional records of 20 other "pilot" projects in Africa. At the Public Records Office, I will review British colonial malaria-control activities. At the UNICEF archive I will study their malaria elimination activities during the 1950-60s, and the CDC archive I will follow up on the 1980s failed elimination campaign. On trips to Geneva and Atlanta I will also interview WHO and CDC employees who worked on malaria elimination campaigns.

Dissemination of research will occur throughout Years 2-5 in the form of conference presentations, presentations to high school students, peer review articles, co-authored blog pieces, publication of a monograph, and sharing of newly developed materials (syllabi, research packages, evaluation surveys) on the my webpage and with colleagues at other institutions. In Years 2-4, I will submit four articles for publication focusing on each of the project's major thematic areas targeted at STS, history, global health, and ethics outlets. Ideal outlets include *Social Studies of Science, Isis*, the *American Journal of Public Health's* "History Essay" column, and *Lancet Global Health.* Book chapters will be drafted and taught with during these years. In Year 4, I will submit the full manuscript and potential outlets include Duke UP and Cornell UP.

The education plan is as follows: In Year 1, I will develop three new classes and the primary source research materials that support them; these classes are described in the next section. In Years 2-5, I will teach these classes on a yearly basis. In Year 4, I will mentor and host a STS/African Studies Post-doctoral fellow. The fellow will co-teach a class, participate in the research group, and serve on at least one undergraduate thesis committee.

In Years 1-5, I will lead the undergraduate research group for 12-15 students; supervise 2-3 undergraduate research assistants; serve as primary advisor for 3-5 students writing undergraduate theses; and co-author blog pieces, conference papers, and articles with undergraduates. In the summer of Year 2, I will bring an undergraduate with me to the WHO Archive to conduct research. Because of the heavy teaching load in the Honors College (5 classes/year), I have included a yearly course buy out to cover these additional activities.

	Outcomes/Activities	Y1	Y2	Y3	Y4	Y5
Research: Data Collection	Ethnographic Research in Zanzibar; expert and lay interviews in Zanzibar; expert interviews in Geneva, Atlanta	X	X			
	Archival Research in Zanzibar National Archives, WHO Archives, CDC Archives, Public Records Office (UK), UNICEF Archive	X	X			
Research: Data Analysis	Interview transcription, translation, coding Archival document digitization, analysis, coding	X	X	X		
Research: Dissemination	Publication of journal articles and monograph		X	X	X	X
	Presentation at conferences (co-author with students)	X	X	X	X	X
Research / Education	Employ and mentor 2-3 research assistants/year	X	X	X	X	X
	Co-author Blog Articles with undergraduates		X	X	X	X
	Advise undergraduate theses integrating primary source data	X	X	X	X	X
	Mentorship of Post-doctoral fellow				X	
	WHO research trip w/ undergraduate research assistant		X			
Education	Prepare new courses (3), primary source materials (3)	X				
	Teach New Courses (3) a total of 3-8 times each		X	X	X	X
	Run weekly global health research group for 12-15 students	X	X	X	X	X
	Presentations to high schools	X	X	X	X	X

Broader Impacts

This CAREER proposal has two primary educational broader impact goals: 1) to have (primarily female) STEM majors *broaden* their understanding of what a scientist is and does to *recognize* the importance of history of science and social studies of science; and 2) to *expose* and *train* these female STEM majors to use social science research methods (primarily historical and anthropological) in their future careers. In order to accomplish these goals, I will carry out the five key activities listed below: develop new courses; run an undergraduate global health research group; hire 2-3 undergraduates per year to work as research assistants; serve as the primary advisor for 2-5 students per year writing undergraduate theses; and provide a year of mentorship for a post-doctoral scholar in STS/African Studies. My primary demographic for these educational activities is female STEM majors. Although my classes and research group are open to all students, my student contact is skewed heavily toward female STEM majors. This is partially because the Honors College is majority women, and partially because these women self-select to work with me. In the past two years in my research group, women held 12 of 13 spots.

Integration of Research & Educational Activities.

1. Developing New Courses. I will develop three new courses that I will teach regularly (each course 3-8 times during the grant cycle) within the Honors College and the Department of History. These new courses are beyond my job expectations, as I have already developed a full roster of successful courses. The new courses will all count toward the new global health minor, and the African Studies minor—adding significant course-based research experiences (CUREs) and their many benefits to students taking the courses (Bangera, Brownell, 2014). The Honors

College courses (capped at 19 students/class) will be at the 200-and 400-level and the History Department course (capped at 50) at the 400/500-level to allow graduate students to participate. There will be no prerequisites to enroll. All of these courses would have students reading draft chapters or articles from my work, would integrate primary source materials from the WHO and Zanzibar National Archives in addition to exposing them to oral sources, and would have students writing research papers drawing on these varied sources. Students would also be encouraged to continue their research with undergraduate theses and presentations at the UO undergraduate research symposium.

A strength of my teaching—and an area where I was recognized for a university-wide teaching award—is having my research inform my teaching. In the past, I have successfully taught with draft book chapters and primary sources and work to show the relevance of history to contemporary. In one class students related the plague in Medieval Europe to the current plague epidemic in Madagascar where we examined live epidemiological data over a period of weeks; another class learned about the Zika outbreak and the WHO response in Brazil and how it mimicked the Rockefeller Foundation's attempt to eradicate yellow fever there in the 1940s.

2. Global Health Research Group. I have piloted a global health research group as a way for interested undergraduates to work with me outside of the classroom and gain research experience. Motivated sophomores and juniors apply to join the group for a 2 or 3-year term. During our weekly 90-minute sessions, I make presentations on research methods, technology to support fieldwork, interview protocols, and invite in guest speakers who present on topics such as developing questionnaires, interview coding, and the IRB process. All participants are required to write an undergraduate thesis, make presentations within our group, and present at either the undergraduate research symposium or at the local high school's global health class. Though this is an extremely gratifying activity to run, it is outside of my formal job responsibilities and not something I can sustain indefinitely with a 5-course teaching load. Feedback from the first cohort of graduating students indicated that the group presents a unique and fulfilling learning and research experience not offered anywhere else at the UO.

3. Undergraduate Research Assistants (RAs). I have successfully employed five undergraduate Research Assistants, teaching the students new skills such as use of Scrivener, ReadCube, Dropbox, EndNote, and transcription software. I take the mentorship very seriously, exposing the students to my own research and writing, and ultimately seek to co-author with them in appropriate journals or blogs such as *Somatosphere* or *Nursing Clio*. To date, I have co-authored a conference paper, a peer-reviewed article, and a book review with an RA and am currently drafting another co-authored article with an Honors College alumna.

4. High School Presentations. I will continue to present my research at the UO's SAIL Program (Summer Academy to Inspire Learning), which serves as a bridge program for middle and high school students from underrepresented backgrounds to encourage them to enroll in college. Students in my research group will also begin presenting on their undergraduate theses at South Eugene High School's "Global Health" class. This opportunity was initiated by the high school instructor, who contacted me specifically to request presentations on student research topics and to have greater contact with Honors College students.

5. Mentorship of Post-Doctoral Fellow. By hiring a post-doc for a year with interests and expertise in STS/African Studies, I would be contributing to the training of a future teacher-researcher. The fellow would be responsible for co-teaching one class with me. This person would also get experience teaching in a liberal arts setting, mentorship of undergraduates, and be able to participate in the larger network of African Studies and STS scholars in Oregon.

Goal	Activity	Audience	Outcome/Evaluation
AWARENESS *Broadening the understanding of role of history in global health interventions*	Writing and submission of: – Monograph to Duke or Cornell UP – 4 academic articles published in STS, history, global health, ethics journals – Co-authored blog posts with undergrads – Op-ed or article in mainstream media/magazine article – Conference papers at STS, History of Science, Global Health, and Global Health Ethics Conferences – Presentations at universities, global health organizations, think tanks	– STS, African Studies, History of Science, Global Health scholars – Global Health Policy Makers – Undergraduate & Graduate Students General Public	– Publication of monograph with academic press – Book reviews of the monograph in history, STS, anthropology, global health journals – Publication of articles in targeted academic and mainstream outlets – References in STS, history, global health books, articles, policy papers – Number of presentations
KNOWLEDGE & IDENTITY *-Broaden* understanding of what scientist is *-Recognize* importance of history of science *-Exposure* to social science methods	-Develop and teach 3 new courses for Honors College and History Department on History of Science, African Studies topics. Estimated 14 classes taught, 500 students reached - Syllabi & research packages of primary source materials (archival, oral, visual, epidemiological)	– High School Students (SAIL) Undergraduate & Graduate Students – Honors College – Female STEM Majors – Writing theses on STS, Global Health, African Studies	– Student Evaluations – Have 3-5 undergraduates choose to write theses on Global Health, STS, African Studies topics using data collected for this project
SKILLS *Train* to use historical & anthropological methods in future research careers of STEM students	– Run weekly global health research group for 12-15 students – Hire and mentor undergraduate research assistants – Advise undergraduate theses integrating primary source data – Archival research trip to WHO with undergraduate RA – Co-write, submit, & present blog post or peer-reviewed article with RAs – Student presentations to high school students	– 8-12 undergraduate research assistants (2-3/year) – 36 research group participants/year (12-15/year) – 15-25 primary advisees (3-5/year)	– Run weekly global health research group for 12-15 students/year – Publication of blog piece or article co-authored with RA – Undergrad presentations to high schools, research symposiums, conferences – Female STEM majors able to incorporate historical & anthropological skills in future research and careers; documented by follow up surveys of former students

Measuring Outcomes. The activities will be evaluated in multiple ways and summarized in an annual report. All incoming students to the global health research group will be surveyed to collect baseline data about their attitudes of how the social sciences (particularly history and anthropology) inform their work as STEM major and self-identified scientist, and then again prior to graduation; the students will also fill out a self-assessment of the skills built through specific activities. I will develop both surveys in consultation with a three-person evaluation committee. The committee will be made up of UO experts in relevant fields, such as: Dr. Kristin Yarris, a medical anthropologist and director of the UO's Center for Global Health; Dr. Bryan Rebar from STEMCORE who has extensive experience with CAREER evaluation; and Dr. Mark Carey, a historian within the Clark Honors College who has received a CAREER STS grant in the past. As part of dissemination activities, both surveys will be shared with colleagues at other institutions and published on my webpage.

Competencies, Skills, Qualifications

Place and Language Competencies: I have been working in Zanzibar for a decade, and in East Africa for 15 years. I completed 3 years of university-level Swahili and a summer of advanced training in Zanzibar as a recipient of a US Foreign Language and Areas Studies (FLAS) grant. I have conducted dozens of interviews independently in Swahili and completed translations used in my publications. I have maintained strong connections there, including co-leading an 8-week study abroad program "Intensive Swahili in Zanzibar."

Teaching competencies: My record of work with undergraduates at the UO shows not only pedagogical innovation but also deep devotion to student learning and educational success. In 2018 I was awarded the university's Ersted Award for Specialized Pedagogy. This award is through a nomination process by colleagues and students, and mine was specifically in recognition of "achievement and expertise in interdisciplinary, research-oriented, socially impactful undergraduate education." At the UO, I have offered 24 sections (12 unique courses) related to African Studies, history of science, and global health in the Departments of Anthropology, History, International Studies, the African Studies Program, the Humanities Program, and the Clark Honors College. Within the CHC, every one of my classes has been enrolled to capacity with a waitlist, and are regularly evaluated above college and university-wide averages.

Integrating Research/Education Competencies: I have a sustained track record of successfully integrating research and education: co-authoring a conference paper and peer reviewed article with an undergraduate, and have another article in progress. I have taught with draft chapters, developed primary source teaching materials, and written high school curriculum.

Mentorship Competencies My mentorship of students includes successfully advising undergraduates to complete award-winning theses, on independent research projects in East Africa, on study abroad programs in Zanzibar, and for the dozen students in my research group. Students working closely with me have won university-wide funding, won national awards such as the Gilman, and have successfully entered Ph.D. programs. I am able to offer something particularly valuable to the young women I mentor who are first generation and minority, and I am open with them about my status as a first generation college student and the particular challenges facing minority students. I will also mentor the intellectual progress of the postdoctoral fellow, drawing on my experiences as co-editor of a book involving 25 contributors, where I provided extensive written, verbal, and in person feedback to up-and coming scholars.

REFERENCES

Abramowitz, Sharon. “Epidemics (Especially Ebola). *Annual Review of Anthropology* 46:1 (2017): 421-445.

———. “Humanitarian morals and money: health sector financing and the prelude to the Liberian Ebola epidemic,” *Critical African Studies*, 8:3 (2016): 319-334,

Aellah, Gemma, Tracey Chantler, P Wenzel Geissler. *Global Health Research in an Unequal World: Ethics Case Studies from Africa.* (CAB International; 2016).

Allen, Denise Roth. *Managing Motherhood, Managing Risk: Fertility and Danger in West Central Tanzania*. Ann Arbor: University of Michigan Press, 2002.

Anderson, Warwick. “Making Global Health History: The Postcolonial Worldliness of Biomedicine.” *Social History of Medicine* (2014).

———. “Postcolonial Technoscience.” *Social Studies of Science* 32, no. 5-6 (2002): 643-658.

———. "Re-orienting STS: Emergent studies of science, technology, and medicine in Southeast Asia." *East Asian Science, Technology and Society: An International Journal* 3.2-3 (2009): 163.

———. "From subjugated knowledge to conjugated subjects: science and globalisation, or postcolonial studies of science?." *Postcolonial Studies* 12.4 (2009): 389-400.

Agrawal, A. “Dismantling the Divide Between Indigenous and Scientific Knowledge.” *Development and Change* 26 (1995): 413-439.

Aronowitz, Robert A. *Making Sense of Illness: Science, Society, and Disease.* New York, NY: Cambridge University Press, 1998.

Bangera, G and S.E. Brownell. “Course Based Undergraduate Research Experiences Can Make Scientifici Research More Inclusive.” *CBE—Life Science Education,* 14: 602-606 (2014).

Barbiero,V.K., A. DeGorges, J. Minjas, and R.J. Tonn. *Project Completion Report: Zanzibar Malaria Control Project.* Arlington, VA: Vector Biology & Control Project, The Medical Service Cooperation International; 1990.

Beck, Ulrich. *Ecological Politics in an Age of Risk.* Translated by Amos Weisz. Cambridge, UK: Polity Press, 1995.

Beckerleg, Susan. “Medical Pluralism and Islam in Swahili Communities in Kenya.” *Medical Anthropology Quarterly* 8 (1994): 299-313.

Beisel, Uli, Ann H. Kelly, and Noémi Tousignant. "Knowing insects: Hosts, vectors and companions of science." *Science as Culture* 22.1 (2013): 1-15.

Benton, Adia. “Exceptional Suffering? Enumeration and Vernacular Accounting in the HIV-Positive Experience.” *Medical Anthropology* 31, no. 4 (2012): 310–328.

———. *HIV Exceptionalism: Development through Disease in Sierra Leone*. University of Minnesota Press, 2015.

Biehl, Joao and Adriana Petryna, eds. *When People Come First: Critical Studies in Global Health.* Princeton: Princeton University Press, 2013.

Cetina, Karin Knorr. *Epistemic Cultures: How the Sciences Make Knowledge.* Cambridge, MA: Harvard University Press, 1999.

Chapin, G., and R. Wasserstrom. "Agricultural Production and Malaria Resurgence in Central America and India." *Nature* 293, no. 5829 (1981): 181–5.

Cohen, Justin M., et al. "Malaria Resurgence: a Systematic Review and Assessment of Its Causes." *Malaria Journal* 11, 1 (2012): 1-17.

Corbellini, G. "Acquired Immunity Against Malaria as a Tool for the Control of the Disease: The Strategy Proposed by the Malaria Commission of the League of Nations in 1933." *Parassitologia* 10 (December 10, 1998): 109–115.

Crane, Johanna. *Scrambling for Africa: AIDS, Expertise, and the Rise of American Global Health Science.* Ithaca: Cornell University Press, 2013.

———. "Adverse Events and Placebo Effects: African Scientists, HIV, and Ethics in the 'Global Health Sciences'." *Social Studies of Science* 40, no. 6 (2010): 843–70.

Cueto, Marcos. *Cold War, Deadly Fevers: Malaria Eradication in Mexico, 1955-1975.* Baltimore, MD: Johns Hopkins University Press, 2007.

Dobson, M.J., M. Malowany, and R.W. Snow. "Malaria Control in East Africa: The Kampala Conference and the Pare-Taveta Scheme: A Meeting of Common and High Ground." *Parissitologia* 42, no. 1-2 (2000): 149-166.

Douglas, Mary, and Aaron Wildavsky. *Risk as Culture: An Essay on the Selection of Technical and Environmental Dangers.* Berkeley, CA: University of California Press, 1982.

Fairhead, James and Melissa Leach. *Misreading the African Landscape: Society and Ecology in a Forest-Savanna Mosaic.* Cambridge: Cambridge University Press, 1996.

Fair, Laura. *Pastimes and Politics: Culture, Community, and Identity in Post-Abolition Urban Zanzibar, 1890-1945.* Athens: Ohio University Press, 2001.

Feierman, Steven. "Explanation and Uncertainty in the Medical World of Ghaambo." *Bulletin of the History of Medicine* 74 (2000): 317-344.

Gearhart, Rebecca and Munib Said Abdulrehman. "Purity, Balance, and Wellness Among the Swahili of Lamu, Kenya." *The Journal of Global Health* (December 2013).

Gessler, M.C., D. E. Msuya, M.H.H. Nkunya, A. Schär, M. Heinrich, M. Tanner. "Traditional Healers in Tanzania: The Perception of Malaria and its Causes." Journal of Ethnopharmacology 48, no. 3 (1995): 119–130.

Geissler, Paul Wenzel. "Public Secrets in Public Health: Knowing not to Know While Making Scientific Knowledge." *American Ethnologist* 40, no.1 (2013): 13-34.

———. ed. *Para-states and Medical Science: Making Global Health in Post-colonial Africa*. Durham: Duke University Press, 2014.

Geissler PW**,** Kelly AH, Lachenal G, Manton J, Tousignant N. *Traces of the Future: An Archaeology of Medical Science in Twenty First Century Africa.* Bristol, Intellect, 2016.

Gieryn, T. F. "City as Truth-Spot: Laboratories and Field-Sites in Urban Studies." *Social Studies of Science* 36, no. 1 (February 1, 2006): 5–38.

Giles-Vernick, Tamara and James L.A. Webb Jr., eds. *Global Health in Africa: Historical Perspectives on Disease Control.* Ohio: Ohio University Press, 2013.

Glassman, Jonathon. *War of Words, War of Stones: Racial Thought and Violence in Colonial Zanzibar*. Indiana University Press, 2011.

Good, Byron J. *Medicine, Rationality, and Experience: An Anthropological Perspective.* Cambridge, UK: Cambridge University Press, 1994.

Graboyes, Melissa. *The Experiment Must Continue: Medical Research and Ethics in East Africa, 1940–2014*. Athens: Ohio University Press, 2015.

———. "'The Malaria Imbroglio:' Ethics, Eradication, and Endings in Pare Taveta, East Africa, 1959-1960." *International Journal of African Historical Studies* 47, no. 3 (2014): 445-472.

Graboyes, Melissa, and Hannah Carr. "Institutional memory, institutional capacity: narratives of failed biomedical encounters in East Africa." *Canadian Journal of African Studies/Revue canadienne des études africaines* 50.3 (2016): 361-377.

Griffin, Jamie T et. al. "Gradual acquisition of immunity to severe malaria with increasing exposure." *Biological Sciences* 282, no. 1801 (2015): 2014–2657

Haraway, Donna. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14, no. 3 (1988): 575–99.

Harding, Sandra G. *Is Science Multicultural? Postcolonialisms, Feminisms, and Epistemologies*. Bloomington: Indiana University Press, 1998.

Harthorn, Barbara Herr and Laury Oaks, eds. *Risk, Culture and Health Inequality: Shifting Perceptions of Danger and Blame*. Westport, CT: Praeger, 2003.

Hayden, Cori. "Taking as Giving: Bioscience, Exchange, and the Politics of Benefit-Sharing." *Social Studies of Science* 37 (2007): 729-758.

Hayes, M. "On the Epistemology of Risk: Language, Logic and Social Sciences." *Social Science and Medicine* 35 (1992): 401-407.

Irwin, Alan, and Brian Wynne, eds. *Misunderstanding Science? The Public Reconstruction of Science and Technology.* Cambridge: Cambridge University Press, 1996.

Issa, Amina. "Malaria and Public Health Measures in Colonial Urban Zanzibar, 1900-1956." *Hygiea Internationalis* 10.2 (2011): 35-51.

Jamrozik, Euzebiusz, et al. "Ethical Aspects of Malaria Control and Research." *Malaria Journal* 14, (2015): 1-7.

Kamat, Vinjay. "Dying Under the Bird's Shadow: Narrative Representations of *Degedege* and Child Survival Among the Zaramo of Tanzania." *Medical Anthropology Quarterly* 22, no. 1 (2008): 67-93.

———. "Resurgence of malaria in Bombay (Mumbai) in the 1990s: a historical perspective." *Parassitologia* 42, no. 1-2 (2000): 135–148.

Kelly, Ann H., and Uli Beisel. "Neglected malarias: the frontlines and back alleys of global health." *Biosocieties* 6.1 (2011): 71-87.

Kilama, Wen. “Health Research Ethics in Public Health: Trials and Implementation of Malaria Mosquito Control Strategies.” *Acta Tropica* 112, 1 (November 2009): S37-S47.

Kleinman, Arthur. *Patients and healers in the context of culture: an exploration of the borderland between anthropology, medicine, and psychiatry.* Berkeley, CA: University of California Press, 1981.

———. *The Illness Narratives: Suffering, Healing, and the Human Condition.* New York: Basic Books, 1988.

Koenker, Hannah M, Dana Loll, Datius Rweyemamu, and Abdullah S. Ali. “A good night’s sleep and the habit of net use: perceptions of risk and reasons for bed net use in Bukoba and Zanzibar.” *Malaria Journal* 12 (2013): 203

Lachenal, G. “At home in the Postcolony. Ecology, Empire and Domesticity at the Lamto Field Station, Ivory Coast.” *Social Studies of Science*, 46:6 (2016).

Langhorne, Jean, Francis M. Ndungu, Anne-Marit Sponaas, and Kevin Marsh. “Immunity to Malaria: More Questions Than Answers.” *Nature Immunology* 9, no. 7 (July 2008): 725–732.

Langwick, Stacey. “Devils, Parasites, and Fierce Needles: Healing and the Politics of Translation in Southern Tanzania.” *Science, Technology & Human Values* 32, no. 1 (2007): 88-117.

———. *Bodies, Politics and African Healing: The Matter of Maladies in Tanzania.* Bloomington: Indiana University Press, 2011.

Lash, Scott, Bronislaw Szerszynski, and Brian Wynne, eds. *Risk, Environment & Modernity: Towards a New Ecology.* London, UK: Sage, 1996.

Leach, Melissa, Ian Scoones and Brian Wynne, eds. *Science and Citizens: Globalization and the Challenge of Engagement.* London: Zed Press, 2005

Lefebvre, Henri. *The Production of Space.* Translated by Donald Nicholson. Oxford, UK: Blackwell, 1991.

Livingston, Julie. “Productive Misunderstandings and the Dynamism of Plural Medicine in Mid-Century Bechuanaland.” *Journal of Southern African Studies* 33, no. 4 (December 2007): 801–810.

Lupton, Deborah. *Risk.* London, UK: Routledge, 1999.

Madison, D. Soyini. *Critical Ethnography: Method, Ethics, and Performance*. Sage Publications, 2011.

Mavhunga, Clapperton. *The Mobile Workshop: The Tsetse Fly and African Knowledge Production.* Cambridge: MIT Press, 2018.

McNeill, John Robert. *Mosquito Empires: Ecology and War in the Greater Caribbean, 1620-1914*. Cambridge University Press, 2010.

Mitchell, Timothy. *Rule of Experts: Egypt, Techno-Politics, Modernity*. Berkeley: University of California Press, 2002.

Molineaux, L. and G. Gramiccia. *The Garki Project:* Research on the Epidemiology and Control of Malaria in the Sudan Savanna of West Africa. Geneva: World Health Organization, 1980.

Muela, Susanna Hausmann, Joan Muela Ribera, Adiel Mushi, and Marcel Tanner. "Medical syncretism with reference to malaria in a Tanzanian community." *Social Science & Medicine* 55 (2002): 403-413.

Nash, Linda. *Inescapable Ecologies: A History of Environment, Disease, and Knowledge*. Berkeley: University of California Press, 2006.

Ndebele, P and R. Musesengwa. "View Point: Ethical Dilemmas in Malaria Vector Research in Africa: Making the Difficult Choice Between Mosquito, Science, and Humans." *Malawi Medical Journal,* 24, 3: 65-68, September 2012.

Nisula, Tapio. *Everyday Spirits and Medical Interventions: Ethnographic and Historical Notes on Therapeutic Conventions in Zanzibar Town*. Helsinki: Suomen Antropologinen Seura, 1999.

Okeke, Iruka. "Partnerships for Now? Temporailty, Capacities, and the Durability of Outcomes from Global health 'Partnernships." *Medical Anthropology Theory* 5 (2018).

Osseo-Asare, Abena Dove. *Bitter Roots: The Search for Healing Plants in Africa*. University of Chicago Press, 2014.

Ottinger, Gwen. "Buckets of resistance: Standards and the effectiveness of citizen science." *Science, Technology, & Human Values* 35.2 (2010): 244-270.

———."Epistemic Fencelines." *Philosophy of Science* 3.1 (2009): 55-67.

Packard, Randall. *The Making of a Tropical Disease.* Baltimore: Johns Hopkins University Press, 2007.

———. "'No Other Logical Choice': Global Malaria Eradication and the Politics of International Health in the Post-War Era." *Parassitologia* 40 (1998): 217-229.

———. "Agricultural development, migrant labor and the resurgence of malaria in Swaziland." *Social Science & Medicine* 22, no. 8 (1982): 861–867.

Parkin, David. "Islam among the Humours: Destiny and Agency among the Swahili." In *African Philosophy as Cultural Inquiry* edited by I. Karp and D. Masolo: 50-65. Bloomington, IN: Indiana University Press, 2000:

Peterson, Alan, and Deborah Lupton. *The New Public Health: Health and Self in the Age of Risk.* London, UK: Sage, 1996.

Pigg, Stacey Leigh. 'On Sitting and Doing: Ethnography as Action in Global Health'. *Social Science & Medicine* 99 (2013): 127–34.

Pollock, Anne. "Places of pharmaceutical knowledge-making: Global health, postcolonial science, and hope in South African drug discovery." *Social studies of science* 44.6 (2014): 848-873.

Redfield, Peter. *Life in Crisis: The Ethical Journey of Doctors Without Borders.* Berkeley: University of California Press, 2013.

Rosenberg, Charles E., and Janet Golden, eds. *Framing Disease: Studies in Cultural History.* New Brunswick, NJ: Rutgers University Press, 1992.

Schwartz, Eli, Hedva Pener, Sultan M Issa, and Jacob Golenser. "An Overview of the Malaria Situation in Zanzibar." *Journal of Community Health* 22, no. 1 (1997): 33–44.

Serlin, David. "Confronting African Histories of Technology: A Conversation with Keith Breckenridge and Gabrielle Hecht." *Radical History Review* 2017.127 (2017): 87-102.

Sharma, V.P., and K.N. Mehrotra. "Malaria Resurgence in India: A Critical Study." *Social Science & Medicine* 22, no. 8 (1986): 835–45.

Sheriff, Abdul. *Slaves, Spices and Ivory in Zanzibar.* James Currey, 1987.

Slovic, P. *The Perception of Risk*. London: Earthscan Publications, 2000.

Smith, David, Justin Cohen, Bruno Moonen, Andrew Tatem, Oliver Sabto, Abdullah Ali and Sultain Mugheiry. "Solving the Sisyphean Problem of Malaria in Zanzibar." *Science* 332, 6036 (2011):1384–85.

Snowden, FM. *The Conquest of Malaria, Italy: 1900-1962.* Yale University Press, 2006.

Tilley, Helen. "Global Histories, Vernacular Science, and African Genealogies; or, Is the History of Science Ready for the World?" *Isis* 101, no. 1 (2010): 110-119.

———. *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950.* Chicago: University of Chicago Press, 2011.

Trape, Jean-François, et al. "The Rise And Fall Of Malaria In A West African Rural Community, Dielmo, Senegal, From 1990 To 2012; A 22 Year Longitudinal Study." *The Lancet Infectious Diseases* 14, no. 6 (June 2014): 476-488.

Webb, James. "The First Large-Scale Use of Synthetic Insecticide for Malaria Control in Tropical Africa: Lessons From Liberia, 1945-1962." *Journal of the History of Medicine and Allied Sciences* 66, no. 3 (July 1 2001): 347–376, 20.

———. *Humanity's Burden: A Global History of Malaria*. Cambridge: Cambridge University Press, 2009.

———. *The Long Struggle against Malaria in Tropical Africa.* Cambridge: Cambridge University Press, 2014.

Webel, Mari. "Ziba Politics and the German Sleeping Sickness Camp at Kigarama, Tanzania 1907-1914." *International Journal of African Historical Studies*. 47, 3 (2014): 399-423.

Wendland, Claire. "Animating Biomedicine's Moral Order." *Current Anthropology* 53, no. 6 (2012): 755–88.

Wynne, Brian. "Misunderstood Misunderstandings: Social identities and Public Uptake of Science." *Public Understandings of Science* 1 (1992): 281-304.

Verran, Helen. "A postcolonial moment in science studies: alternative firing regimes of environmental scientists and aboriginal landowners." *Social Studies of Science* 32.5-6 (2002): 729-762.

Yip, Ka-che, ed. *Disease, colonialism, and the state: Malaria in modern East Asian history*. Hong Kong University Press, 2009.

Biographical Sketch

Melissa Graboyes
Assistant Professor
326 Chapman Hall
1293 University of Oregon
Eugene, OR 97403-1293
Office Phone: (541) 346-2829
Email: graboyes@uoregon.edu

(a) Professional Preparation

University of California	Davis, California	History	B.A., 2002
Boston University	Boston, MA	History	M.A., 2007
Boston University	Boston, MA	Public Health	M.P.H., 2007
Boston University	Boston, MA	History	Ph.D., 2010

(b) Appointments

2016 –	Assistant Professor, Clark Honors College, University of Oregon, Eugene, OR
2012-2015	Assistant Director, African Studies Program, University of Oregon, Eugene, OR
2011-2014	Faculty Fellow, University of Oregon, Eugene, OR
2007	Lecturer, Boston University, Boston, MA
2003-2004	Rural Reach Coordinator, Population Services International, Dar es Salaam, Tanzania

(c) Products

(i) Five (5) products most closely related to the proposed project

Melissa Graboyes and Hannah Carr. "Institutional Memory, Institutional Capacity: Narratives of Failed Biomedical Encounters in East Africa." *Canadian Journal of African Studies*, vol. 51, no. 1, 2017, pp. 361-377.

Melissa Graboyes. *The Experiment Must Continue: Medical Research and Ethics in East Africa, 1940-2014.* Athens, OH: Ohio University Press, 2015.

Melissa Graboyes. "'The Malaria Imbroglio:' Ethics, Eradication, and Endings in Pare Taveta, East Africa, 1959-1960." Special Issue on the History of Medicine in East Africa. *International Journal of African Historical Studies,* vol. 47, no. 3, 2014, pp. 445-472.

Melissa Graboyes. "Incorporating Medical Research Into the History of Medicine in East Africa." Introduction to Special Issue on the History of Medicine in East Africa. *International Journal of African Historical Studies,* vol. 47, no. 3, 2014, pp. 379-398.

Melissa Graboyes. "Fines, Orders, Fear…and Consent? Medical Research in East Africa, c.

1950s." *Journal of Developing World Bioethics,* vol. 10, Apr. 2010, pp. 34-41.

(ii) Five (5) other significant products, whether or not related to the proposed project.

Melissa Graboyes. "Teaching Ebola: Responses, Ethics, and the Future." Curriculum, for Boston University African Studies Outreach Center, 2017.

Melissa Graboyes. "Difficult, Dark and Uncomfortable: Writing about Terrible Truths." Blog Post, for *Books Combined*, Oct. 2016.

Melissa Graboyes. "Chappati Complaints and Biriani Cravings: The Aesthetics of Food in Colonial Zanzibari Institutions." *Journal of Eastern African Studies,* vol. 5, May 2011, pp. 313-328.

Melissa Graboyes. "Learning From the Past: The Future of Malaria in Africa." *Issues in Brief*, Boston University Pardee Center, 2009.

Melissa Graboyes. "Exploring Disease in Africa: A Curriculum for Advanced High School Students." Curriculum, for Boston University African Studies Outreach Center, 2008.

(d) Synergistic Activities

Melissa Graboyes. Co-Director, Center for Global Health. University of Oregon. 2016-2018.

Melissa Graboyes. Executive Committee Member, African Studies Program. University of Oregon. 2016-2018.

Melissa Graboyes. Leader, Undergraduate Research Group in Global Health. University of Oregon. 2016-2018.

Melissa Graboyes and Mokaya Bosire, Co-Directors, "Intensive Swahili in Zanzibar" 8-week summer study abroad program. 2014-2018.

Melissa Graboyes. "Catalog to Historical Materials Housed at Amani Station, Tanzania. National Institute of Medical Research." 2008.

Other Personnel Biographical Information

Data Not Available

SUMMARY PROPOSAL BUDGET

YEAR 1

FOR NSF USE ONLY		
PROPOSAL NO.	DURATION (months) Proposed	Granted
1844715		
AWARD NO.		

ORGANIZATION: **University of Oregon Eugene**

PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR: **Melissa Graboyes**

A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-months CAL	ACAD	SUMR	Funds Requested By proposer	Funds granted by NSF (if different)
1. **Melissa Graboyes - Principal Inv**	**2.85**			**25,774**	
2.					
3.					
4.					
5.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	**0.0**			**0**	
7. (**1**) TOTAL SENIOR PERSONNEL (1 - 6)	**2.85**			**25,774**	
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. (**0**) POST DOCTORAL SCHOLARS	**0.0**			**0**	
2. (**0**) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	**0.0**			**0**	
3. (**0**) GRADUATE STUDENTS				**0**	
4. (**2**) UNDERGRADUATE STUDENTS				**3,500**	
5. (**0**) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				**0**	
6. (**0**) OTHER				**0**	
TOTAL SALARIES AND WAGES (A + B)				**29,274**	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)				**10,486**	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)				**39,760**	
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $5,000.)					
TOTAL EQUIPMENT				**0**	
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)				**6,500**	
2. INTERNATIONAL				**12,000**	
F. PARTICIPANT SUPPORT COSTS					
1. STIPENDS $ **0**					
2. TRAVEL **0**					
3. SUBSISTENCE **0**					
4. OTHER **0**					
TOTAL NUMBER OF PARTICIPANTS (**0**) TOTAL PARTICIPANT COSTS				**0**	
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES				**2,000**	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				**0**	
3. CONSULTANT SERVICES				**0**	
4. COMPUTER SERVICES				**0**	
5. SUBAWARDS				**0**	
6. OTHER				**750**	
TOTAL OTHER DIRECT COSTS				**2,750**	
H. TOTAL DIRECT COSTS (A THROUGH G)				**61,010**	
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) **Modified Total Direct Costs (MTDC) (Rate: 47.5, Base:61010)**					
TOTAL INDIRECT COSTS (F&A)				**28980**	
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)				**89,990**	
K. SMALL BUSINESS FEE				**0**	
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				**89,990**	
M. COST SHARING PROPOSED LEVEL $	AGREED LEVEL IF DIFFERENT $				

PI/PD NAME: **Melissa Graboyes**

ORG. REP. NAME*: **Stephanie Gray**

FOR NSF USE ONLY		
INDIRECT COST RATE VERIFICATION		
Date Checked	Date Of Rate Sheet	Initials - ORG

1 ***ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET**

SUMMARY PROPOSAL BUDGET

YEAR 2

FOR NSF USE ONLY		
PROPOSAL NO.	DURATION (months)	
	Proposed	Granted
AWARD NO.		

ORGANIZATION: **University of Oregon Eugene**

PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR: **Melissa Graboyes**

PROPOSAL NO.: **1844715**

A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-months CAL	ACAD	SUMR	Funds Requested By proposer	Funds granted by NSF (if different)
1. **Melissa Graboyes - Principal Inv**	**2.85**			**26,548**	
2.					
3.					
4.					
5.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	**0.0**			**0**	
7. (**1**) TOTAL SENIOR PERSONNEL (1 - 6)	**2.85**			**26,548**	
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. (**0**) POST DOCTORAL SCHOLARS	**0.0**			**0**	
2. (**0**) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	**0.0**			**0**	
3. (**0**) GRADUATE STUDENTS				**0**	
4. (**2**) UNDERGRADUATE STUDENTS				**3,500**	
5. (**0**) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				**0**	
6. (**0**) OTHER				**0**	
TOTAL SALARIES AND WAGES (A + B)				**30,048**	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)				**10,797**	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)				**40,845**	
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $5,000.)					
TOTAL EQUIPMENT				**0**	
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)				**2,000**	
2. INTERNATIONAL				**13,000**	
F. PARTICIPANT SUPPORT COSTS					
1. STIPENDS $ **0**					
2. TRAVEL **0**					
3. SUBSISTENCE **0**					
4. OTHER **0**					
TOTAL NUMBER OF PARTICIPANTS (**0**) TOTAL PARTICIPANT COSTS				**0**	
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES				**2,000**	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				**0**	
3. CONSULTANT SERVICES				**0**	
4. COMPUTER SERVICES				**0**	
5. SUBAWARDS				**0**	
6. OTHER				**0**	
TOTAL OTHER DIRECT COSTS				**2,000**	
H. TOTAL DIRECT COSTS (A THROUGH G)				**57,845**	
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) **Modified Total Direct Costs (MTDC) (Rate: 47.5, Base:57845)**					
TOTAL INDIRECT COSTS (F&A)				**27476**	
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)				**85,321**	
K. SMALL BUSINESS FEE				**0**	
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				**85,321**	

M. COST SHARING PROPOSED LEVEL $ | AGREED LEVEL IF DIFFERENT $

PI/PD NAME: **Melissa Graboyes**

ORG. REP. NAME*: **Stephanie Gray**

FOR NSF USE ONLY		
INDIRECT COST RATE VERIFICATION		
Date Checked	Date Of Rate Sheet	Initials - ORG

2 *ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

SUMMARY PROPOSAL BUDGET

YEAR 3

FOR NSF USE ONLY		
PROPOSAL NO.	DURATION (months) Proposed	Granted
1844715		
AWARD NO.		

ORGANIZATION: **University of Oregon Eugene**

PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR: **Melissa Graboyes**

A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-months CAL	ACAD	SUMR	Funds Requested By proposer	Funds granted by NSF (if different)
1. **Melissa Graboyes - Principal Inv**	**0.9**			**8,635**	
2.					
3.					
4.					
5.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	**0.0**			**0**	
7. (**1**) TOTAL SENIOR PERSONNEL (1 - 6)	**0.9**			**8,635**	
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. (**0**) POST DOCTORAL SCHOLARS	**0.0**			**0**	
2. (**0**) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	**0.0**			**0**	
3. (**0**) GRADUATE STUDENTS				**0**	
4. (**2**) UNDERGRADUATE STUDENTS				**3,500**	
5. (**0**) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				**0**	
6. (**0**) OTHER				**0**	
TOTAL SALARIES AND WAGES (A + B)				**12,135**	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)				**5,293**	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)				**17,428**	
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $5,000.)					
TOTAL EQUIPMENT				**0**	
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)				**2,000**	
2. INTERNATIONAL				**0**	
F. PARTICIPANT SUPPORT COSTS					
1. STIPENDS $ **0**					
2. TRAVEL **0**					
3. SUBSISTENCE **0**					
4. OTHER **0**					
TOTAL NUMBER OF PARTICIPANTS (**0**) TOTAL PARTICIPANT COSTS				**0**	
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES				**2,000**	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				**0**	
3. CONSULTANT SERVICES				**0**	
4. COMPUTER SERVICES				**0**	
5. SUBAWARDS				**0**	
6. OTHER				**750**	
TOTAL OTHER DIRECT COSTS				**2,750**	
H. TOTAL DIRECT COSTS (A THROUGH G)				**22,178**	
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) **Modified Total Direct Costs (MTDC) (Rate: 47.5, Base:22178)**					
TOTAL INDIRECT COSTS (F&A)				**10535**	
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)				**32,713**	
K. SMALL BUSINESS FEE				**0**	
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				**32,713**	

M. COST SHARING PROPOSED LEVEL $ | AGREED LEVEL IF DIFFERENT $

PI/PD NAME: **Melissa Graboyes**

ORG. REP. NAME*: **Stephanie Gray**

FOR NSF USE ONLY		
INDIRECT COST RATE VERIFICATION		
Date Checked	Date Of Rate Sheet	Initials - ORG

3 ***ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET**

SUMMARY PROPOSAL BUDGET

YEAR 4

FOR NSF USE ONLY		
PROPOSAL NO.	DURATION (months)	
	Proposed	Granted
1844715		
AWARD NO.		

ORGANIZATION: **University of Oregon Eugene**

PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR: **Melissa Graboyes**

A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-months CAL	ACAD	SUMR	Funds Requested By proposer	Funds granted by NSF (if different)
1. **Melissa Graboyes - Principal Inv**	**0.9**			**8,894**	
2.					
3.					
4.					
5.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	**0.0**			**0**	
7. (**1**) TOTAL SENIOR PERSONNEL (1 - 6)	**0.9**			**8,894**	
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. (**1**) POST DOCTORAL SCHOLARS	**12.0**			**55,000**	
2. (**0**) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	**0.0**			**0**	
3. (**0**) GRADUATE STUDENTS				**0**	
4. (**2**) UNDERGRADUATE STUDENTS				**3,500**	
5. (**0**) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				**0**	
6. (**0**) OTHER				**0**	
TOTAL SALARIES AND WAGES (A + B)				**67,394**	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)				**38,061**	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)				**105,455**	
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $5,000.)					
TOTAL EQUIPMENT				**0**	
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)				**5,000**	
2. INTERNATIONAL				**0**	
F. PARTICIPANT SUPPORT COSTS					
1. STIPENDS $ **0**					
2. TRAVEL **0**					
3. SUBSISTENCE **0**					
4. OTHER **0**					
TOTAL NUMBER OF PARTICIPANTS (**0**) TOTAL PARTICIPANT COSTS				**0**	
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES				**2,000**	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				**0**	
3. CONSULTANT SERVICES				**0**	
4. COMPUTER SERVICES				**0**	
5. SUBAWARDS				**0**	
6. OTHER				**2,000**	
TOTAL OTHER DIRECT COSTS				**4,000**	
H. TOTAL DIRECT COSTS (A THROUGH G)				**114,455**	
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) **Modified Total Direct Costs (MTDC) (Rate: 47.5, Base:114455)**					
TOTAL INDIRECT COSTS (F&A)				**54366**	
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)				**168,821**	
K. SMALL BUSINESS FEE				**0**	
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				**168,821**	

M. COST SHARING PROPOSED LEVEL $ | AGREED LEVEL IF DIFFERENT $

PI/PD NAME: **Melissa Graboyes**

ORG. REP. NAME*: **Stephanie Gray**

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INDIRECT COST RATE VERIFICATION		
Date Checked	Date Of Rate Sheet	Initials - ORG

4 *ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

SUMMARY PROPOSAL BUDGET

YEAR 5

FOR NSF USE ONLY		
PROPOSAL NO.	DURATION (months)	
	Proposed	Granted
AWARD NO.		

ORGANIZATION: **University of Oregon Eugene**

PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR: **Melissa Graboyes**

PROPOSAL NO.: **1844715**

A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-months CAL	ACAD	SUMR	Funds Requested By proposer	Funds granted by NSF (if different)
1. **Melissa Graboyes - Principal Inv**	**0.9**			**9,161**	
2.					
3.					
4.					
5.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	**0.0**			**0**	
7. (**1**) TOTAL SENIOR PERSONNEL (1 - 6)	**0.9**			**9,161**	
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. (**0**) POST DOCTORAL SCHOLARS	**0.0**			**0**	
2. (**0**) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	**0.0**			**0**	
3. (**0**) GRADUATE STUDENTS				**0**	
4. (**2**) UNDERGRADUATE STUDENTS				**3,500**	
5. (**0**) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				**0**	
6. (**0**) OTHER				**0**	
TOTAL SALARIES AND WAGES (A + B)				**12,661**	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)				**5,861**	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)				**18,522**	
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $5,000.)					
TOTAL EQUIPMENT				**0**	
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)				**2,000**	
2. INTERNATIONAL				**0**	
F. PARTICIPANT SUPPORT COSTS					
1. STIPENDS $ **0**					
2. TRAVEL **0**					
3. SUBSISTENCE **0**					
4. OTHER **0**					
TOTAL NUMBER OF PARTICIPANTS (**0**) TOTAL PARTICIPANT COSTS				**0**	
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES				**2,000**	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				**0**	
3. CONSULTANT SERVICES				**0**	
4. COMPUTER SERVICES				**0**	
5. SUBAWARDS				**0**	
6. OTHER				**750**	
TOTAL OTHER DIRECT COSTS				**2,750**	
H. TOTAL DIRECT COSTS (A THROUGH G)				**23,272**	
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) **Modified Total Direct Costs (MTDC) (Rate: 47.5, Base:23272)**					
TOTAL INDIRECT COSTS (F&A)				**11054**	
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)				**34,326**	
K. SMALL BUSINESS FEE				**0**	
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				**34,326**	

M. COST SHARING PROPOSED LEVEL $ | AGREED LEVEL IF DIFFERENT $

PI/PD NAME: **Melissa Graboyes**

ORG. REP. NAME*: **Stephanie Gray**

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INDIRECT COST RATE VERIFICATION		
Date Checked	Date Of Rate Sheet	Initials - ORG

5 ***ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET**

SUMMARY PROPOSAL BUDGET

Cummulative

FOR NSF USE ONLY		
PROPOSAL NO.	DURATION (months)	
	Proposed	Granted
AWARD NO.		

ORGANIZATION: **University of Oregon Eugene**

PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR: **Melissa Graboyes**

PROPOSAL NO.: **1844715**

A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-months CAL	ACAD	SUMR	Funds Requested By proposer	Funds granted by NSF (if different)
1. **Melissa Graboyes - Principal Inv**	**8.4**			**79,012**	
2.	**0.0**			**0**	
3.	**0.0**			**0**	
4.	**0.0**			**0**	
5.	**0.0**			**0**	
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	**0.0**			**0**	
7. (**1**) TOTAL SENIOR PERSONNEL (1 - 6)	**8.4**			**79,012**	
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. (**1**) POST DOCTORAL SCHOLARS	**12.0**			**55,000**	
2. (**0**) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	**0.0**			**0**	
3. (**0**) GRADUATE STUDENTS				**0**	
4. (**10**) UNDERGRADUATE STUDENTS				**17,500**	
5. (**0**) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				**0**	
6. (**0**) OTHER				**0**	
TOTAL SALARIES AND WAGES (A + B)				**151,512**	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)				**70,498**	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)				**222,010**	
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $5,000.)					
TOTAL EQUIPMENT				**0**	
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)				**17,500**	
2. INTERNATIONAL				**25,000**	
F. PARTICIPANT SUPPORT COSTS					
1. STIPENDS $ **0**					
2. TRAVEL **0**					
3. SUBSISTENCE **0**					
4. OTHER **0**					
TOTAL NUMBER OF PARTICIPANTS (**0.0**) TOTAL PARTICIPANT COSTS				**0**	
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES				**10,000**	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				**0**	
3. CONSULTANT SERVICES				**0**	
4. COMPUTER SERVICES				**0**	
5. SUBAWARDS				**0**	
6. OTHER				**4,250**	
TOTAL OTHER DIRECT COSTS				**14,250**	
H. TOTAL DIRECT COSTS (A THROUGH G)				**278,760**	
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE)					
TOTAL INDIRECT COSTS (F&A)				**132411**	
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)				**411,171**	
K. SMALL BUSINESS FEE					
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				**411,171**	
M. COST SHARING PROPOSED LEVEL $	AGREED LEVEL IF DIFFERENT $				

PI/PD NAME: **Melissa Graboyes**

ORG. REP. NAME*: **Stephanie Gray**

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Date Checked	Date Of Rate Sheet	Initials - ORG

C *ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

Budget Justification

A. Senior Personnel

Melissa Graboyes, Principal Investigator (PI). In summers of Year 1 and Year 2, the PI will conduct a total of 4 months of ethnographic and archival research in Zanzibar and Europe, including a trip to the WHO archives with an undergraduate research assistant (full travel details included below.) The PI also requests a one course reduction for Years 1-5 due to the PI's heavy teaching load of 5 courses per year. During these years, the PI will write peer review articles and book chapters in addition to managing the educational activities on the project: running a Global Health Research Group, mentoring the postdoctoral fellow, training and working with undergraduate research assistants, new course development.

The combination of 4 months of summer fieldwork and 1 course release per year is equivalent to 8.4 months of full time equivalent person months over the course of the grant. (1 course release is estimated at .9 full time equivalent person month). The total amount of summer salary requested is $17,635 in Year 1 and $18,164 in Year 2. The course releases costs are between $8,139-$9161 per year.

The requested salary includes a 3% annual Cost of Living Adjustment (COLA) rate based on the State of Oregon's Bureau of Labor.

B. Other Personnel

Postdoctoral Fellow: Funding is requested for a one-year postdoctoral fellow in Year 4, with a salary of $55,000.

Undergraduate Research Assistants: Funding is requested for $3,500 per year in Years 1-5 for undergraduate research assistants, with the salary for the student workers set at between $10-$12/hour depending on experience. Students will contribute to the research and gain independent skills necessary for them to complete their own undergraduate theses.

C. Fringe Benefits

University of Oregon employee fringe benefit costs encompass the following items for UO employees, all of which are required: (a) FICA, (b) retirement, (c) health insurance, (d) workmen's compensation/SAIF, (e) unemployment insurance, (f) employee liability insurance, (g) life insurance, (h) graduate teaching fellows' fringe benefits including health insurance and fees, and (i) leave as appropriate. For the purpose of estimating and budgeting proposal costs, fringe benefit rates are based on employee classification (E-Class) in accordance with the University's federally-negotiated fringe benefit rate proposal submitted to the Department of Health and Human Services (DHHS). Please note that when leave is taken by an employee, it is charged directly to a central fund and not charged to the sponsored project.

D. Travel

Travel in Africa, Europe and the United States is vital for the completion of proposed research and dissemination of results. The PI anticipates spending the summers of Year 1 and 2 based in Europe and East Africa, and all travel costs are outlined below. The total requested travel budget is **$42,500**.

a) Dissemination: Conferences. Funds are requested for the PI to attend one academic conference each year of the grant, covering airfare from Eugene, OR, lodging, per diem, and registration costs at a rate of $2000 per conference ($700 airfare, $1000 room and board, $300 for registration). **TOTAL $10,000**

b) 1 Research Trip to New York in Y1: Archival UNICEF, New York. 1 week. ($700 airfare, $1800 room and board). **TOTAL $2,500**

c) 1 Research Trip to Atlanta in Y1: Archival CDC, Atlanta. 1 week. ($700 airfare, $1300 room and board) **TOTAL $2000**

d) 2 Research Trips to Zanzibar in summers Y1 and Y2: Ethnographic research. 12 weeks spread over 2 trips summers. ($2000 airfare, $3000 room and board/4 weeks= $5,000 per trip x 2 trips) **TOTAL $10,000**

e) 1 Research Trip to Europe in Y1: archival research Public Records Office (London) and WHO Archives (Geneva). 4 weeks. ($2000 airfare; $5000 room and board). **TOTAL $7,000**

f) 1 Research Trip to Geneva in Y2: archival research WHO Archives (Geneva) *with an undergraduate student* in addition to the PI. 10 days. ($2000 airfare x 2; $2000 room and board x 2). **TOTAL $8,000**

g) One-time relocation costs in the amount of $3,000 are requested for a Postdoctoral Scholar in Y4. **TOTAL $3000**

E. Other Direct Costs

a) Funding is requested for $2000/year for research-related materials and supplies such as books, photocopies, software, dropbox data storage, etc. **TOTAL $10,000**

b) Funding is requested for honoraria for three evaluators in Y1, Y3 and Y5 ($250 per evaluator per year). **TOTAL $750**

F. Indirect Costs

Facilities and Administrative costs are calculated at the on-campus rate of 47.5% of MTDC in all project years. The University of Oregon's current indirect cost rate agreement has been negotiated with the U. S. Department of Health and Human Services and is dated April 24, 2018. **TOTAL $132,411**

CURRENT AND PENDING SUPPORT

Melissa Graboyes

Pending Support:
Funding Opportunity: NSF 17-537—Faculty Early Career Development Program.
Directorate for Social, Behavioral and Economic Sciences (SBE)
Division for Science, Technology & Society

Total award amount (including indirect): $411, 171

Number of Person-Months per year devoted to project:

Y1: 2.85 PMs; Y2: 2.85 PMs; Y3: 0.9 PMs; Y4: 0.9 PMs; Y5: 0.9 PMs

Current Support: None

FACILITIES AND OTHER RESOURCES

University of Oregon

The University of Oregon (UO) is a comprehensive research university with a long history of success in targeted areas of research and scholarship. For over a century our faculty have created groundbreaking new lines of inquiry in fields ranging from algebra to zebrafish. We focus on basic research and training in the core arts, humanities, and sciences, which is enhanced by deep integration with strong graduate programs and professional schools. Innovative, high-impact scholarship results from this partnership. The UO is one of only two AAU institutions in the Pacific Northwest.

The Robert D. Clark Honors College is ranked one of the top 10 public honors colleges in the country by Public University Honors, an independent organization. The college is home to roughly 850 talented undergraduates who represent 65 different undergraduate majors. The Honors College is housed in newly renovated Chapman Hall, which is where the PI is provided office space.

The UO provides comprehensive instructional, research, and public service programs that advance scientific and humanistic knowledge. Research programs serve the educational, cultural, and economic needs of the region and the nation. Administrative units provide direct oversight and support for graduate programs, grant proposal submission, research compliance, contracts and grant administration, and research initiatives. UO has collaborative research-based relationships with every school district in the state and in many other states in the United States. The facilities at UO will contribute substantially to the success of the proposed research.

Computer Support

UO operates a centralized data and authentication system. All faculty and staff have accounts and have direct access on campus or via VPN from off campus. Internet access is provided at no cost. Data access and transfer capacity are excellent. Computer support is available from the university's Computing Center and from in-house IT staff at PSI. The Computing Center also employs statistical and computer consultants to assist faculty with other computer needs.

Scientific Environment

UO provides strong support for synergistic and multidisciplinary collaborations across departments, research centers, and institutes. The office of the Vice President for Research and Innovation supports some 20 interdisciplinary research institutes/centers and promotes innovative research programs through financial programming, administrative support, and advocacy. Most recently the UO announced an ambitious new effort: the Knight Campus for Accelerating Scientific Impact. The initiative is specifically designed to fast-track scientific discoveries and the process of turning those discoveries into innovations that improve the quality of life for people in Oregon, the nation and beyond. A first 160,000 sf research building on the campus is slated to open in early 2020 with an explicit mission to incorporate scientists from multiple disciplines.

Additional Support

The PI has substantial additional institutional supports in the form of research funds supplied by the Office of the Vice President for Research and Innovation in addition to annual research support from the Clark Honors College. Course releases are available to faculty members post-tenure to support new research projects, and the UO has an extensive set of research libraries.

Data Management Plan

1. Expected Data

The proposed CAREER research will primarily collect and then analyze existing data from three different sources: 1) archival documents stored in various institutions such as the World Health Organization, the Centers for Disease Control, and many others; 2) approximately 60 oral interviews collected from Zanzibaris and experts in malaria control; 3) direct observations of malaria control and elimination efforts in Zanzibar. Oral interviews will be collected in line with guidelines from the Oral History Association's "Principles and Best Practices" (http://www.oralhistory.org/about/principles-and-practices). All archival materials in their original forms and repositories are publicly accessible and contain no sensitive data or intellectual property. The oral interviews will be audio recorded or gathered through email correspondence in accordance with IRB requirements.

2. Data Format

Data from archives will be stored both as electronic images (digital photographs or scans in PDF format) and as typed notes in Microsoft Word .doc files or Scrivener (a research management software which stores proprietary .scriv files). Data from libraries and published sources will be saved, in the case of published primary sources, as PDF documents, and in the case of books or manuscripts, as typed notes that I produce myself in Microsoft Word or Scrivener. Audio recorded interviews will be saved in MPEG-4 High Profile (.mp4) file format, as outlined in the University of Oregon's "Best Practices" for data management (https://library.uoregon.edu/research-data-management/best-practices).

3. Access to Data and Data Sharing Practices

Data Sharing and Access Managed by the PI

Internal data sharing. Data shared with my students, research assistant, or coauthors is considered to be shared internally. Selected data files (images of document pages, photos, select interview transcripts) will be posted on the PI's research group's Canvas page, which is available only to undergraduates currently enrolled in the Global Health Research Group. RAs and coauthors will have access to all files relevant for the project they are working on.

External data sharing. Data requests outside of my working group will be shared according to the following policy. The primary method of data sharing and access will be by providing bibliographical references. Bibliographic references will be posted on my official website so users can find the sources themselves.

- **Images of archival records, personal field notes.** These images will be made available upon request to other researchers. Requests will be directed to me in writing, and must include an explanation for the use. Requests made for commercial purposes, or for purposes that raise privacy or confidentiality concerns, will be rejected. If it is unclear whether a request should be rejected, I

will make consult with the University of Oregon's Institutional Review Board. I may also temporarily restrict access to documents that I use in my analysis until after the article or book using the document as been published.

- **Interview audio or transcript files, interview notes.** I consider all documents pertaining to subjects I interview to be confidential. I will not make those files available for sharing.

Data and Metadata Standards

In line with common oral history practices and the University of Oregon's Scholars' Bank (see below), the project will apply the Dublin Core standard to metadata in consultation with the University of Oregon library. This will be primarily for the oral data because other data will be notes the PI writes from archival documents or published materials consulted, rather than original data.

Protection of Privacy

Privacy and confidentiality of the collected oral histories will be maintained following the best practices of the Oral History Association (see above). This project has already received University of Oregon IRB approval (#06052017.007) and has also received research clearance in Zanzibar from the Chief Minister's Office. Other data collected from archives and libraries is publicly available and not subject to privacy or confidentiality concerns.

4. **Archiving of Data**

I will store my data on my password-protected hard drive and my University of Oregon secure network server space. Data will also be archived in line with guidance from the University of Oregon Libraries "stewardship and Archiving of Research Data," and in accordance to the IRB protocol. It will be archived and preserved in the University of Oregon's Scholars' Bank, a repository for the intellectual work of faculty that is maintained by the university library. Data in this Scholars' Bank is preserved according to the "digital preservation standards enacted by the Libraries for all digital collections" (https://library.uoregon.edu/research-data-management/best-practices). Scholars' Bank will ensure that services such as format conversion or data migration will be performed if/when necessary.

5. **Roles and responsibilities**

I will be responsible for collection, storage, and sharing of all the data discussed in this document.

POST-DOCTORAL FELLOW MENTORING PLAN

The postdoctoral fellow will spend one year based at the Clark Honors College at the University of Oregon. The Honors College is a small liberal arts college nested within the larger university, home to 850 talented students. Courses are offered at the 200 and 400-level, giving faculty members the opportunity to teach both introductory and advanced courses. All classes within the Honors College are interdisciplinary, interactive, and capped at 19 students. Many of the courses incorporate student research and have flexible formats that can accommodate out-of-classroom experiences such as museum visits, conference presentations, guest speakers, and special events.

The postdoctoral fellow's major responsibilities will be to continue a research agenda oriented around STS/African Studies. The PI will provide mentorship in the form of a weekly research meeting where works in progress can be discussed, the opportunity to formally present as part of the African Studies Lecture Series, and research funds to present at a relevant national conference during her fellowship. The PI will be open to co-publishing with the fellow.

The fellow will be strongly encouraged to take advantage of other professional development services and activities available at the UO. These include resources offered through the National Center for Faculty Development & Diversity, and in person seminars offered by the Teaching Engagement Program on job market preparation such as "Writing a Statement of Teaching Philosophy." Seminars are also available through Research Development Services, one day workshops on preparing for NSF and NIH grants and the ability to meet with professionals in that office to seek guidance on draft applications. The PI will provide direct and indirect support for the fellow around job market activities, such as writing letters of recommendation, drawing on intellectual networks, and organizing mock interviews or job talks.

A major part of the fellow's mentorship will come around successful teaching in a liberal arts setting. During the fellow's year, she will be responsible for co-teaching one class with the PI. The PI and fellow will jointly decide on the level and topic of the course that best fits the interests and needs of the fellow. Through a co-teaching experience, the fellow will share responsibilities with the PI in running classroom discussions, responding to student writing, providing writing feedback, and assessing students. The PI will benefit from teaching with and receiving feedback from an award-winning instructor while also developing her own teaching techniques. In addition to regular feedback from the PI, the PI will also arrange for an evaluation of teaching from another faculty member in the Honors College, and for a video-taped consultation with the Teaching Engagement Program to provide feedback to both the PI and fellow.

The fellow will also build student mentorship skills by participating in weekly global health research group (led by the PI) where a dozen undergraduates writing theses on topics relates to STS, history, global health topics. The fellow will also serve as the Honors College representative on at least one undergraduate thesis committee, providing insight into the undergraduate research process without unduly burdening the fellow with the responsibilities of serving as a primary advisor.

UNIVERSITY OF OREGON

Robert D. Clark Honors College

July 8, 2018

National Science Foundation
2415 Eisenhower Avenue
Alexandria, Virginia 22314

Dear Colleagues,

I am writing on behalf of Melissa Graboyes, who is applying for NSF CAREER Grant through the Science, Technology, and Society (STS) program area. This letter of strong support is meant to do four things: first, to confirm that Professor Graboyes is eligible for this award; second, to describe the mission of the University of Oregon Clark Honors College (CHC) and indicate its commitment to effective integration of research and teaching, third, to document the CHC's support of the activities outlined in Graboyes's proposal and indicate how they advance the goals of our College; and fourth, to outline how the College has and will continue to support Professor Graboyes's professional development.

Melissa Graboyes is currently an Assistant Professor of History in the Clark Honors College. She began in a tenure-track position in September 2016 and has completed two full years of full-time work. She is currently undergoing tenure and promotion review and a decision on her case will be announced in May 2019. Her NSF CAREER Grant proposal is for a project on the history and ethics of failed malaria elimination campaigns in Zanzibar over the past century and turns to that small island to glean insights that will be relevant to ongoing malaria elimination activities globally. In this project, Graboyes will be investigating African vernacular knowledge/local understandings of elimination activities in order to augment—and challenge—the extant literature about why elimination failed in Africa. Her aim in emphasizing vernacular knowledge and attending to African politics is to help broaden the STS literature.

The main educational components of Graboyes's project will entail developing three new undergrad/grad courses related to STS/Africa/disease. In these courses, she will expose students to primary source research materials (some of them her own drafts of chapters); run an intensive undergraduate research/thesis group related to global health; hire and mentor 10-12 undergraduate research assistants; co-author conference papers and articles with them; and host a post-doctoral fellow in STS/African Studies at the Clark Honors College.

The Clark Honors College is a rigorous, selective, small liberal arts college nested within in a larger research university. CHC provides a distinctive learning environment—entailing curricular and pedagogical rigor based in intensive mentoring and advising—that encourages students to be active, engaged scholars, who will eventually make a difference in our world. The core identity of the Clark Honors College is interdisciplinary. CHC courses stress independent critical thinking, analytic writing, persuasive argument, original research, and inquiry across traditional disciplinary boundaries. The college curriculum fosters interest in diverse cultures and approaches to learning as Professor Graboyes's courses suggest.

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Tenure-track faculty in the CHC are expected to pursue an active program of research and scholarship appropriate to their professional qualifications, expertise, and evolving professional interests; and to disseminate the results of this effort to appropriate scholarly and lay audiences through publication and other forms of presentation. They must demonstrate an equally strong commitment to innovative, high-impact, evidence-based teaching and to service and mentorship that are uniquely oriented toward undergraduates. Teaching and advising are more intensive in the CHC than in other schools and colleges on campus. Professor Graboyes is fulfilling, and indeed, exceeding, all job requirements in addition to initiating other important activities that are beyond the expectations of her teaching appointment: running an undergraduate research group on Global Health, hiring CHC students as research assistants, co-authoring with undergraduates, serving as the primary advisory for multiple undergraduate theses, developing and running an eight-week study abroad program in Zanzibar for the Study Abroad Office are not expectations of her tenure-track position but rather are contributions Professor Graboyes makes to student learning and mentoring because of her own teaching mission and ethics. Many of those contributions are components of Professor Graboyes's CAREER proposal.

Ironically, creating the undergraduate research group, employing our students as research assistants, co-authoring articles with students, and the leading a summer study-abroad program in Zanzibar are outside of the scope of her regular duties and, though profoundly beneficial to our students and to the research field, will not be sustainable without grant support. A few weeks ago, Melissa Graboyes received the UO's Ersted Award for Specialized Pedagogy (https://around.uoregon.edu/content/six-faculty-members-honored-prestigious-teaching-awards); and yet, the very efforts that garnered the award are the pedagogies that will be difficult to continue without the NSF CAREER award (she was recognized "for her interdisciplinary undergraduate research on global health problems" and praised for providing "students with her own research in progress as part of course materials and highlight[ing] steps in the research process, which are otherwise invisible to students newly learning about university research").

We feel fortunate that Professor Graboyes is a core faculty member in the honors college and have supported her work in all the ways that we are able: she receives an annual Academic Support Account fund for research expenses, was given research start up funds through the VPRI office, we recently funded her tuition to the Faculty Success Program through the National Center for Faculty Diversity and Development, we have paired her in a formal relationship with a senior mentor on campus, and we accommodate a flexible course schedule when she needs to be away for extended research trips in East Africa and Europe. Because she is a worthy teacher and scholar, we also nominate her for all appropriate awards and honors. We will continue to offer all the support we have to Professor Graboyes, but, again, we don't have the kind of support required for her NSF CAREER proposal project.

I hope you will give Melissa Graboyes's application every consideration. Professor Graboyes will continue to make significant contributions to Science, Technology, and Society discussions, and we should all support her work.

Sincerely,

Karen J. Ford

Karen J. Ford
Interim Dean of the Clark Honors College

The following information regarding collaborators and other affiliations (COA) must be separately provided for each individual identified as senior project personnel. The COA information must be provided through use of this COA template.

Please complete this template (e.g., Excel, Google Sheets, LibreOffice), save as .xlsx or .xls, and upload directly as a Fastlane Collaborators and Other Affiliations single copy doc. Do not upload .pdf.

If there are more than 10 individuals designated as senior project personnel on the proposal, or if there are print preview issues, each completed template must be saved as a .txt file [select the Text (Tab Delimited) option] rather than as an .xlsx or .xls file. This format will still enable preservation of searchable text and avoid delays in processing and review of the proposal. Please note that some information requested in prior versions of the PAPPG is no longer requested. THIS IS PURPOSEFUL AND WE NO LONGER REQUIRE THIS INFORMATION TO BE REPORTED. Certain relationships will be reported in other sections (i.e., the names of postdoctoral scholar sponsors should not be reported, however if the individual collaborated on research with their postdoctoral scholar sponsor, then they would be reported as a collaborator). The information in the tables is not required to be sorted, alphabetically or otherwise.

There are five separate categories of information which correspond to the five tables in the COA template:

COA template Table 1:
List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

COA template Table 2:
List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

COA template Table 3:
List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following: The individual's Ph.D. advisors; and All of the individual's Ph.D. thesis advisees.

COA template Table 4:List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following: Co-authors on any book, article, report, abstract or paper with collaboration in the last 48 months (publication date may be later); and Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.

COA template Table 5: List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief must list the entire editorial board. Editorial Board: List name(s) of editor-in-chief and journal in the past 24 months; and Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 months.

The template has been developed to be fillable, however, the content and format requirements must not be altered by the user. This template must be saved in .xlsx or .xls format, and directly uploaded into FastLane as a Collaborators and Other Affiliations Single Copy Document. Using the .xlsx or .xls format will enable preservation of searchable text that otherwise would be lost. It is therefore imperative that this document be uploaded in .xlsx or .xls only. Uploading a document in any format other than .xlsx or .xls may delay the timely processing and review of the proposal.

This information is used to manage reviewer selection. See Exhibit II-2 for additional information on potential reviewer conflicts.
1 Note that graduate advisors are no longer required to be reported.
2 Editorial Board does not include Editorial Advisory Board, International Advisory Board, Scientific Editorial Board, or any other subcategory of Editorial Board. It is limited to those individuals who perform editing duties or manage the editing process (i.e., editor in chief).

List names as Last Name, First Name, Middle Initial. Additionally, provide email, organization, and department (optional) to disambiguate common names. Fixed column widths keep this sheet one page wide; if you cut and paste text, set font size at 10pt or smaller, and abbreviate, where necessary, to make the data fit.
To insert n blank rows, select n row numbers to move down, right click, and choose Insert from the menu.

You may fill-down (crtl-D) to mark a sequence of collaborators, or copy affiliations. Excel has arrows that enable sorting. For "Last Active Date" and "Last Active" columns dates are optional, but will help NSF staff easily determine which information remains relevant for reviewer selection. "Last Active Date" and "Last Active" columns may be left blank for ongoing or current affiliations.

Table 1: List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

1	Your Name:	Your Organizational Affiliation(s), last 12 mo	Last Active Date
	Graboyes, Melissa	University of Oregon, Clark Honors College	

Table 2: List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

R: Additional names for whom some relationship would otherwise preclude their service as a reviewer.

to disambiguate common names

2	Name:	Type of Relationship	Optional (email, Department)	Last Active Date

Table 3: List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following.
G: The individual's Ph.D. advisors; and
T: All of the individual's Ph.D. thesis advisees.

to disambiguate common names

3	Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
G	McCann, James C.	Boston University	mccann@bu.edu
G	Wylie, Diana	Boston University	wylie@bu.edu

Table 4: List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:
A: Co-authors on any book, article, report, abstract or paper with collaboration in the last 48 months (publication date may be later); and
C: Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.

to disambiguate common names

4	Name:	Organizational Affiliation	Optional (email, Department)	Last Active Date
A	Gilman, Lisa	George Mason University	Folklore	
A	Iddirsu, Habib	University of Oregon	Ethnomusicology	
A	Balogun, Kemi	University of Oregon	Sociology	

Table 5: List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief must list the entire editorial board.
B: Editorial Board: List name(s) of editor-in-chief and journal in the past 24 months; and
E: Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 months.

to disambiguate common names

5	Name:	Organizational Affiliation	Journal/Collection	Last Active Date

Suggested Reviewers

Claire Wendland, University of Wisconsin, Madison.
cwendland@wisc.edu

Stacey Langwick, Cornell University.
Sal54@cornell.edu

Sheryl McCurdy, University of Texas Health Science Center at Houston.
Sheryl.a.mccurdy@utc.tmc.edu

Clapperton Mavungha, Massachusetts Institute of Technology.
mavhunga@mit.edu

Mari Webel, University of Pittsburg.
mwebel@ pitt.edu

James Webb, Colby College.
James.webb@colby.edu

Helen Tilley, Northwestern University.
Helen.tilley@northwestern.edu

List of Reviewers Not to Include

Data Not Available