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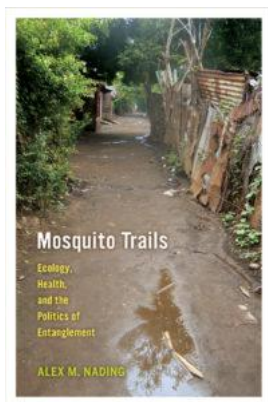
CONVERSATIONS

IDRF Book Exchange: *Mosquito Trails*

IDRF fellows discuss Alex Nading's book Mosquito Trails: Ecology, Health, and the Politics of Entanglement, based on his International Dissertation Research Fellowship research on waste management and disease ecologies in urban Nicaragua.

by Alex Nading, Chris Gratien, Aman Luthra and Alejandro Cerón

April 2, 2018 (April 2, 2018)



IDRF fellows discuss Alex Nading's book *Mosquito Trails: Ecology, Health, and the Politics of Entanglement* (University of California Press, 2014), based on his International Dissertation Research Fellowship research on waste management and disease ecologies in urban Nicaragua.

Chris Gratien:



For decades, researchers in the sciences and humanities have repeated a consistent refrain: mosquitoes suck. The very names employed in the scientific classifications of mosquito species are testament to this antipathy. The *Anopheles* genus bears a name meaning “useless” or “good for nothing,” while the generic name of *Aedes* mosquitoes connotes odiousness. These labels were issued even before the discovery that *Anopheles* mosquitoes transmit malaria parasites, or that *Aedes* play a role in the transmission of dengue, yellow fever, and, more recently, Zika virus. Although their image as disease vector is little over a century old, mosquitoes quickly came to be represented in the public health campaigns of the twentieth century as enemies of humanity. Disease eradication meant mosquito eradication, and, even as this goal has proved elusive, the mosquito and its control have remained at the center of modern discourses surrounding epidemiology.

Alex Nading's *Mosquito Trails* builds on recent trends in the environmental humanities and social sciences that have questioned the sociopolitical consequences of slandering these bloodsuckers. In addition to demonstrating the sometimes unforeseen environmental costs of mosquito eradication efforts like swamp drainage and aerial pesticide spraying, a growing body of literature on global public health has emphasized that disease can never be separated from issues of economic inequality, war, and the politics of space. In this monograph based on two years of ethnographic research in Ciudad Sandino, a municipality on the periphery of Nicaragua's capital, Nading not only demonstrates how politics and ecology are intimately intertwined; he shows that, in their efforts to cope with both the very real threat of mosquito-borne illness and the effects of poverty and political upheaval, community health workers in Nicaragua have found a framework for understanding disease that goes beyond the familiar trope of “man versus mosquito.”

Nading uses entanglement, defined as “the unfolding, often incidental attachments and affinities, antagonisms and animosities that bring people, nonhuman animals, and things into each other's world,”¹

as a way to conceptualize the various relationships among humans, households, urban infrastructure, garbage, government bureaucracies, global health officials, missionaries, doctors, and mosquitos forged by the issue of

dengue fever. Dengue is caused by a virus transmitted by *Aedes aegypti*, and the course of Nading's field visits to Nicaragua between 2006 and 2011 saw a sharp rise in confirmed and suspected cases of the disease. Field interviews with two-dozen *brigadistas*—the predominantly female health workers who carried out house-to-house dengue prevention campaigns for the Nicaraguan Ministry of Health—revealed that, despite a disciplining discourse of global public health centering on household hygiene and protecting people from mosquitos, the *brigadistas* came to understand disease control “as a search for ways to *open* bodies to new forms of attachment.”² Because life in Ciudad Sandino is deeply entangled with the landscapes and ecological practices that facilitate the spread of dengue, the global “best practice” of insulating humans from vectors of disease or infectious spaces proved impracticable.

Throughout three parts of the book on the respective themes of infrastructure, bodies, and knowledge, each containing two chapters, Nading follows “mosquito trails” into the different domains of Ciudad Sandino linked by dengue. The task of following mosquitos and the movement of knowledge about them lends structure to both the “house to house” methodology of Nading's fieldwork and the narrative of the book. Each chapter contains a number of vignettes that elucidate dengue's entanglements across an urban landscape. In keeping with the framework of entanglement, all of the themes, chapters, and stories contained within are inextricably linked to one another by the circuitous path of the mosquito and the “rhizomatic” phenomenon of dengue.

The reader will undoubtedly emerge from *Mosquito Trails* more aware of the challenges confronting efforts to control dengue. If people often act counter to the prescriptions or “best practices” of health officials and ignore their proscriptions, it is not due to a mere lack of knowledge or trust. Rather, because mosquitos live in anthropogenic landscapes, and the life of *Aedes aegypti* is intertwined with that of Ciudad Sandino residents, a barrier between dengue and humans can only be constructed at the risk of disrupting the livelihoods of communities already stretched too thin. While Nading resists a simple conflation of disease and poverty, the economic condition and political marginalization of the people who account for most dengue cases emerge as factors that overshadow conceptions of household hygiene or medical surveillance in consideration of dengue pandemics.

Anthropologists who read *Mosquito Trails* will be pleased by the richness of Nading's ethnography. The work may be equally valuable to historians who study mosquito-borne illness or the history of public health more broadly. The engagement of garbage collectors, community health workers, and patients with the question of dengue allows us to think more imaginatively about scenarios that can often only be read between the lines of physician narratives from archives and scientific research. Finally, the story of dengue in Nicaragua may be informative for global health workers who, in their attempts to address disease issues on a transcontinental scale, often miss the opportunity to understand how it is deeply embedded in place and entangled with constantly reconstituted political and socioeconomic relationships specific to the communities in which epidemics occur.

I would like to pose the following questions to Professor Nading regarding *Mosquito Trails* and its implications for both scholarly and public audiences:

1. Many scholars have found value in the notion of entanglement for writing against the Cartesian division of society and nature, understanding the interconnected worlds of humans and nonhuman animals, and embracing the messiness of the stories that emerge through archival and ethnographic work. In reading *Mosquito Trails*, I was intrigued by the ways in which the notion of entanglement spoke to the lived and reported experiences of some of your interlocutors. Drawing on one or two examples from the book, could you explain how entanglement serves not only as a methodological framework for studies of relationships as “the smallest patterns for analysis,” but also as a framework that, to some degree, faithfully represents the subjective experiences of people in Ciudad Sandino with mosquitos and dengue fever?
2. One of my favorite passages in *Mosquito Trails* provides the image of dengue mosquitoes as “single mothers”³—a striking metaphor that emerges partly because it is the female mosquitoes that engage in blood feeding, but that also appears as a joke among the *brigadistas*, who see some parallel between the lives of mosquitos and their own lives as women in Ciudad Sandino. Could you elaborate on how this metaphor might disrupt the longstanding discourse of mosquito as mortal enemy to be destroyed at all costs?
3. Readers will find many resonances between the themes discussed in *Mosquito Trails* and the medical anthropology of other places throughout the world. In *We Have No Microbes Here*, for example, a study of medical care in a Turkish Black Sea village by Sylvia Wing Önder, the author highlights how the concept of “care” is central to medical decision-making in the home. In other words, while the people Önder encountered during fieldwork did not necessarily reject the medical knowledge of licensed government health care providers, deciding between local healers—often women—and the government physicians was not a question of “doctor knows best” but rather “who cares?” In *Mosquito Trails*, a similar dynamic is at play in the activities of the *brigadistas*, and it is not unusual for potentially paternalistic health campaigns to rely on women's social knowledge and access. I would like to know more about how dengue and the question of “who cares?” are part of the recent political history of Nicaragua. Have any prominent activists, political parties, or government officials claimed to better understand the issues of entanglement elicited by the experience of the *brigadistas* when approaching public health, and, if so, have they found ways to use health care as a site to vie for political power?

4. Your book was published just before the beginning of another public health drama involving *Aedes aegypti*: the Zika outbreak. Have you been back to Ciudad Sandino to see developments since the time of your fieldwork, or can you reflect on the emergence of the Zika virus in light of some of your research and conclusions in *Mosquito Trails*?
5. Although *Mosquito Trails* does not necessarily set out to offer prescriptions for dealing with contemporary pandemics, it could, as mentioned above, be a very informative read for global medical workers or government officials involved in devising public health policy. I was especially intrigued by the change in the relationship that took place among *brigadistas*, their communities, and the mosquitoes through day-to-day intimacy and experiential knowledge. What can the experience of these workers in Ciudad Sandino teach global health workers?



"Dengue Prevention Depends on You!" A sign promoting the local anti-dengue campaign in Ciudad Sandino, 2007. Photo by Alex Nading.

Aman Luthra:



Alex Nading's *Mosquito Trails* is, in many ways, a remarkable book. It provides a compelling and engaging account of dengue through a theoretical lens that views the entanglement of humans, nonhumans, and things as a material, spatial, and temporal condition. In doing so, he complicates the binaries and dichotomies between public and private, human and nonhuman, pest and pet, and waste and value. Nading's method, in particular, is really impressive in its temporal length, spatial breadth, and ethnographic depth. Following mosquito trails with garbage collectors, *brigadistas*, and garbage scavengers and brokers is such an innovative way to conduct research on such an important topic.

This book is of special interest to me because of my own research in urban planning, waste management, and the informal sector of scavengers in urban India. Much of Nading's discussion of scavenging communities in Ciudad Sandino brought up issues those in India face. The general vilification of scavengers as public health threats, for instance, transgresses spatial and temporal boundaries, with their treatment in popular and policy discourse similar across both national borders and history; see, for example, Bharati Chaturvedi and Vinay Gidwani for a discussion of waste pickers in metropolitan Delhi, Mary Downs and Martin Medina's commentary on the global history of scavengers, and Alain Faure's examination of ragpickers in nineteenth century Paris.⁴

But another intersection of Nading's work with my own has to do with personal responsibility. Nading illustrates how "individual choice, rather than collective action, became the operative force in infrastructure"⁵ in Nicaragua using, among other evidence, two Nicaraguan Ministry of Health brochures—an older one focused on diarrhea and a newer one on dengue—which illustrate beautifully this shift from collective to individual or from public to private responsibility. The shift also calls to mind Max Liboiron's resuscitation of the miasma theory and the influence model of harm in understanding and addressing bodily plastic pollution.⁶

Liboiron shows how the “amorphous, contingent architecture and agency of plastic pollution” might be better understood through a miasmatic logic rather than current dominant models and solutions.⁷ I wonder if there is value in the influence model to understand dengue as an epidemic, particularly in light of the uncertainties and “becomings” involved in “managing” it.

In my own work, I trace how the sorting of household waste has emerged as an important policy imperative that simultaneously devolves responsibility to the private realm and obfuscates the larger infrastructural problems that plague the existing waste management system. Irmgard Schultz has skillfully demonstrated how the unpaid domestic labor of women in sorting trash into numerous categories is enrolled in the industrial process of producing recycled commodities in Germany.⁸

Something as mundane as sorting our daily trash is linked to broader politico-economic imperatives. Although Nading explores this, I would urge a deeper consideration of the political economy of “aesthetic ordering of the home environment” in dengue prevention campaigns in urban Nicaragua.

Related to the above recommendation for a stronger materialist analysis, I want to bring up the idea of entanglement as being productive, as “resulting in a particular kind of pleasure,” whereby the existence of the “life worlds” of mosquitoes and viruses allowed *brigadistas* to learn “more about who they were.”⁹ Nading argues, thus, that “ethical engagements with landscapes” need not be “anthropocentric.”¹⁰

My comments on Nading’s use of attachment and care and his emphasis on nonhuman agency are twofold. First, I wonder how not being anthropocentric is possible. Even in his account, it was the *brigadistas* who learned about mosquitoes and viruses, which were only important to the story in the first place *because* they disrupted an anthropogenic landscape. If mosquitoes and viruses were disrupting any other kind of landscape (if that were even possible), then Nading would likely never have researched nor written this book. In the last instance, much more than a source of pleasure, the mosquitoes were simply deadly.

Second, Nading uses the epidemiologist’s single mother joke as an “expression of the attachment” between humans and nonhumans. Although he acknowledges the joke was part of the epidemiologist’s strategy to “shorten the social distance between herself . . . and the *brigadistas*.”¹¹ I wonder if it is reading too much into it to argue for the notion of attachment. Similarly, I wonder if anything is unique about the pleasure the *brigadistas* found in mosquito hunting. Nading suggests that “brigadistas, too, were fascinated by mosquitoes.”¹² The highlighting of this pleasure and fascination borders on romanticism, unless the purpose of invoking these concepts is clarified more explicitly.

In short, I wonder what purpose—political or even purely academic—the deployment of these concepts of attachment serves. Without doubt, nonhuman nature has real social effects and needs to be taken seriously, as many scholars of new materialism and actor-network theory have shown. To borrow from Scott Kirsch and Don Mitchell, however, it might serve us well to deepen and give political efficacy to this project by taking seriously also the “ontological problems of causality, accountability and the directedness of social relations.”¹³

Finally, in the conclusion, Nading provides three lessons for nonanthropologists. First, he calls for greater attention to politics and poverty in the formulation of global public health projects, and, second, he calls for recognizing *brigadistas* as workers who need more economic remuneration, benefits, and social recognition. So far so good. Where he falls short is in his third lesson, where he suggests those interested in global health need to “contemplate the relations of people to nonhuman creatures” so we develop “holistic, radical solutions” that do not simply “reaffirm a short-sighted, anthropocentric view of health.”¹⁴ What do such solutions look like? What does it mean to put into practice a “relational ethic of health?”¹⁵ Nading hopes the “stories in this book . . . also cause us to look again at the many forms public health can and must take.”¹⁶ The book’s conclusion might have served us better if Nading had shown us what some of these many forms are or could be.



Brigadistas undergoing an inspection before a mosquito control campaign, 2008. Photo by Alex Nading.

Alejandro Cerón:



An accomplished piece of contemporary ethnography, Alex Nading's *Mosquito Trails: Ecology, Health, and the Politics of Entanglement* skillfully presents the interplay between everyday human experience and larger social structures, but with a focus on their interactions with the nonhuman world. Filled with appealing ethnographic descriptions, the book follows the lives of community health workers, or *brigadistas*, in Ciudad Sandino, Nicaragua, whose inhabitants have experienced in the past fifty years a cruel military dictatorship, a triumphant revolution filled with hope and disillusionment, a series of corrupt neoliberal governments, and the unique blend of ideologies, policies, and clientelism that sustain the current regime. The portrait of *brigadistas* that emerges is one of multidimensional human beings, profoundly gendered and classed, whose lives are marked by their hopes and fears, relationships of harmony and conflict, the everyday decisions they make navigating between abstract aspirations of personal and societal improvement, and concrete realities of fulfilling basic needs amid poverty and precarious jobs.

The book's most obvious theoretical contribution is the notion of the "politics of entanglement," or the different human and nonhuman "attachments" that shape the distribution of wealth, health, and power in a given setting. The concept emphasizes relationships and has material, spatial, and temporal dimensions. Nading's main accomplishment comes from his construction of entanglement in terms of these "attachments," a concept influenced by the interdisciplinary fields of political ecology and the social studies of science and technology, thanks to which readers can see beyond the book's human protagonists and into their interactions with the nonhuman elements that are part of their lives. This conceptual emphasis, although not completely new to anthropology, as Nading points out, is a great contribution to those of us working in global health because it pushes us to think about those attachments even when what we see more immediately are the detached human and nonhuman elements. The concept brings to life the relational aspects we often ignore.

Other conceptual contributions are worth mentioning because their use by Nading is innovative. Concepts like moral economies and evangelical ecology help us explore new dimensions of environmental health. The contrasts between participation and surveillance, data and stories, and management and politics help highlight some of the daily dilemmas and paradoxes of public health work. The discussion that contrasts the seasonality of epidemiological analysis with the experience of living the consequences of seasonal emergencies is very insightful. But my favorite of such concepts is “ecological aesthetics,” which relates to the interest in “visualizing ethics—seeing *right* and *wrong*—but also the *how* and *why* and *whom* of relationships.”¹⁷ Ecological aesthetics emphasizes “a relational knowledge of life,” in contrast to public health’s more rigid aesthetics, which emphasizes “control *over* life.”¹⁸ Ecological aesthetics gets at the core of how people care about the surrounding world and is best exemplified by a joke shared by some *brigadistas* and epidemiologists: “Dengue mosquitoes are single mothers.”¹⁹

I connected to *Mosquito Trails* at both an intellectual and personal level, and I have some questions for the author that go beyond the book itself.

1. As a sociocultural anthropologist, I have been fascinated by political ecology as a framework I have read about but never used in my work. It seems to me the works I have read that use such a framework—by environmental health specialists, geographers, and anthropologists—relate directly to environmental concerns. What anthropological questions going beyond strictly environmental concerns have you thought about potentially being explored using the notion of entanglements? What methodological challenges are associated with investigating entanglements using traditional ethnographic methods?
2. Before becoming an anthropologist, I worked as a public health physician in rural Guatemala, often involved in efforts in the field to control all sorts of diseases. From that perspective, I very much enjoyed the book because I could relate to most of it at a personal level while, at the same time, learning new ways of thinking about such work and experiences. You say in the concluding chapter that you want the book to be a pragmatic as well as a theoretical exercise, and, I wonder, what would you say is the main takeaway for a professional social scientist or public health specialist working at the national level in a low-income country? What would you say are the main challenges to important work like yours in reaching the actors who could implement changes to what they do, inspired by insights gained from your work?
3. I read your book in June 2017 during a visit to Managua, where I was struck by the reputation the country still has for having a strong social organization around health that people attribute to the years of the Sandinista revolution. I got the same sense as in two previous visits in 1995 and 2005 that social participation in health is special in Nicaragua. I would like to know your thoughts about the role of community health workers with regard to public health policies. Is social participation in health possible? Can public health policies in low-income countries find ways to implement strategies that do not end up relying on the exploitation of volunteer, impoverished community health workers?
4. As an anthropology professor, I often encounter students like the ones you describe in the introduction of your book, full of good intentions to make a difference in the world. In the 1980s and '90s and into the early 2000s, internationalists from the United States, Canada, and Europe, inspired by the idea of solidarity as a driving force, pursued social justice as a conceivable, shared goal through a counter-hegemonic project in which the youth was politicized. Since the failure of these efforts, I have seen youth go from fighting for social justice, to apathy and confusion, to indignation, but they have no shared goals to fight for. In the book’s conclusion, you refer to the current state of global health governance, which is highly defined by philanthrocapitalists who only support technological solutions. Beyond reproducing the current hegemonic solutions, what could be the terms on which our students can engage with the world?

Alex Nading Responds:



I am grateful for the generous reviews of *Mosquito Trails* by Chris Gratien, Aman Luthra, and Alejandro Cerón. Before responding to their questions and critiques, I wish to express my thanks to the Social Science Research Council for organizing this Book Exchange forum, which has offered me a rare and humbling chance to revisit a book whose final words were written nearly four years ago. To put that timing in perspective, four years before that, I was still in the midst of fieldwork for the project (thanks, again, to the SSRC)!

I’ve returned to Nicaragua several times since the publication of *Mosquito Trails*. Although Daniel Ortega and the Frente Sandinista de Liberación Nacional (FSLN) remain in political power, the government has significantly revamped public policy since my initial fieldwork ended. Public health and other sectors now emphasize a Nicaraguan version of *buena vida*, or “good living.” I am currently researching how well this plays out in practice, but in rhetoric, the government has redefined “participation” to emphasize human responsibilities to nonhuman nature, the aesthetic value of the city, green energy, and a host of other broadly ecological values. (I hasten to add that, despite this environmental turn in social policy, the FSLN maintains draconian restrictions on women’s reproductive rights, and it continues to pursue a potentially catastrophic plan to construct a transoceanic shipping canal to rival that of Panama.) So, to answer questions posed by Cerón and Gratien, a recognition of something like

“entanglement” is certainly a presence at the broadest level in Nicaraguan public health and public policy, including, as Luthra might be interested to hear, in waste management.²⁰

In his review, Gratien wonders whether the concept of entanglement is primarily a means of theorizing “relationships as the smallest patterns for analysis” or whether it represents the experience of my (human) interlocutors. Initially, at least, the latter was closer to the truth. I did not begin fieldwork with the intention of basing my analysis on the idea of human–nonhuman attachment. To be honest, I was not steeped at that time in debates and conversations in what are now called “multispecies ethnography” and “environmental humanities.” The problem I set out to address was closer to one that Gratien identifies in his review—namely, that “mosquitoes suck,” yet they are a fact of life in places like Ciudad Sandino. As an anthropologist, my goal was to try to capture how people lived with such a paradox.

One aspect of entanglement (both as an analytical and a descriptive device) I feel I did not fully explore in the book is that it is not simply a binary human–animal affair. After completing the book, I began thinking about the role mosquito-killing chemicals, particularly the organophosphate Temephos, played in the lives of community health workers. As I argued in an article written later, community health workers depend upon these toxic chemicals to do their work, yet they are also vulnerable to injury by them.²¹

Mosquito

prevention involves complex relationships among people, mosquitoes, *and* chemicals. That chemicals are both essential tools and dangerously unregulated toxic substances further compounds the ethical entanglements of ground-level dengue prevention.

Both Gratien and Luthra wanted to know more about the metaphorical association between mosquitoes and “single mothers” in Ciudad Sandino. For Luthra, my emphasis on *brigadistas*’ fascination with mosquitoes in the chapter in question “borders on romanticism.” While I think Luthra sees romanticism as something to be avoided, I am not so sure. After all, Romanticism (of the big-“R” variety, in philosophy and literature) was a movement that rejected objectivist empiricism and emphasized what I would call the entanglement of the self with the nonhuman world of nature.

Contemporary disease control measures still hew to an objectivist division of nature from culture. They presume pathogens and vectors can be measured and rationally controlled through interventions like chemical mosquito abatement. But as my colleague and fellow anthropologist Frédéric Keck argues, people’s everyday engagements with pathogens and insects are much more akin to what an earlier generation of (perhaps “romantic”) thinkers such as Claude Lévi-Strauss, Lucien Lévy-Bruhl, and Henri Bergson would have called “primitive” fascination. As I suggest in *Mosquito Trails*, Nicaraguan *brigadistas* are essentially mosquito hunters. Keck explains, borrowing from Bergson, that even when hunters are fully aware of the rational mechanical laws that cause an arrow or bullet to penetrate the hide of their prey, they still take “irrational” steps to increase their success. For instance, they “attribute intentions to things so that it is possible to act with them as if they were persons.”²²

Some address the “spirit” of the animal through magic, myth, and ritual; others think of prey as kin; others, like the *brigadistas*, imagine the lived ecologies of nonhumans as social. This tendency, which I’m happy to call “romantic” but prefer in the book to call “ecologically aesthetic,” takes interspecies relations beyond material cause and effect. Whether or not we are community health workers, when we contemplate epidemics of Zika, dengue, or avian influenza, many of us imagine viruses, mosquitoes, and birds (not to mention chemicals) as intentional entities.

What I’m arguing in *Mosquito Trails* is that community health workers—at least the most dedicated and effective ones I know—are romantics. They cannot do the work they do without feeling emotionally and imaginatively enveloped in the lives of mosquitoes. This is not to ignore the material dimensions of mosquito abatement, of course. My point is that imagining mosquitoes (romantically) as single mothers actually *foregrounds* the gendered politics of causality, accountability, and social relations to which Luthra refers in his review. If you’re a mosquito hunter and you want to succeed, it is impossible to be anthropocentric, even when your objective is to destroy a deadly nonhuman enemy.

Luthra, Gratien, and Cerón all wanted to know more about the recommendations and critiques I make in the conclusion to the book. In different ways, they all asked me to clarify how community health work might be practiced otherwise. I agree much remains to be said on this point. Consider the case of Zika, which Gratien mentioned specifically in his questions about the book’s implications. If Zika control were simply a matter of managing mosquito populations, we likely would have heard very little about it, given that dengue and chikungunya epidemics, spread by the same mosquito, had already been growing rapidly in scope across Latin America before the Zika outbreak. I have read repeatedly that Zika is unique because of the virus’ potential to cause devastating complications in fetal development. This is true, but from a broader perspective, Zika actually isn’t so novel. It has simply magnified existing shortcomings in conventional public health approaches to mosquito-borne disease, particularly in low-income cities. As I argue in *Mosquito Trails* and elsewhere, Nicaraguan community health workers found themselves in a double bind. They had to treat mosquito-borne disease as a

single, discrete problem, while knowing it was inextricably bound up with other problems, such as poor water quality, inadequate sanitation and waste management, and gendered inequities. Viewed from the vantage point of the World Health Organization (WHO) in Geneva or the public health department in Miami-Dade County, Florida, Zika seems to reveal something new: that mosquito-borne disease and reproductive health are connected. But from the vantage point of community health workers in places like Nicaragua or Brazil, this is far from a novel observation. The pictures of babies with microcephaly shocked many people, but the fact that those most vulnerable to mosquito-borne disease are also those with the least access to reproductive medical care, including contraceptive care, is an everyday reality for people like the *brigadistas*.

Like Cerón, I remain concerned about how my anthropology and global health students might best engage with places like Ciudad Sandino and problems like dengue. One way to start is to return to a principle of community-based primary care: to *listen* to community health workers, valuing their perspective not only about what causes disease epidemics but also about what they mean. The role of the student, activist, or anthropologist is, at best, that of conduit, or of interference device, counterintuitively slowing down the frenetic technological pace of global health interventions to ensure less powerful voices are not filtered out.

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Nicaragua



Alex Nading

Alex Nading is a Senior Fellow at the Watson Institute for International and Public Affairs at Brown University. His first book, *Mosquito Trails: Ecology, Health, and the Politics of Entanglement* (University of California Press, 2014), is an ethnography of community-based dengue fever control in urban Nicaragua. His subsequent work examined ethical debates among scientists, global health organizations, and corporations working to develop dengue vaccines and genetically modified mosquitoes. He is currently co-principal investigator on a three-year National Science Foundation-funded study of hygiene, sanitation, and environmental quality in Managua. He is also involved in another long-term ethnographic project, funded by the Wenner-Gren Foundation for Anthropological Research, on an epidemic of chronic kidney disease of undetermined causes in Nicaragua's sugar plantation zone. He received a 2007 SSRC International Dissertation Research Fellowship.



Chris Gratien

Chris Gratien is Assistant Professor of History at University of Virginia, where he teaches courses on environmental history and the history of the modern Middle East. His research concerns the social and environmental history of the late Ottoman Empire. He is also producer of Ottoman History Podcast, an internet radio program featuring weekly interviews with scholars about issues in the history and culture of the Ottoman Empire, the modern Middle East, and the Islamic world. He received a 2012 SSRC International Dissertation Research Fellowship.



Aman Luthra

Aman Luthra is Assistant Professor in the Department of Anthropology and Sociology and Kalamazoo College. His research interests are broadly in the fields of political ecology, urban studies and Marxism. He received a 2012 SSRC International Dissertation Research Fellowship.



Alejandro Cerón

Alejandro Cerón is a researcher interested in the social and cultural aspects of health in Guatemala and Central America. Through his work he pays particular attention to the link between public health practice and health as a human right from the perspective of sociocultural epidemiology. He received a medical degree in 2000 and a master in public health in 2006 (both from the University of San Carlos of Guatemala), as well as a doctoral degree in anthropology from the University of Washington in 2013. He received a 2010 SSRC International Dissertation Research Fellowship. Between 2001 and 2006, he worked in rural Guatemala as a physician and primary health project coordinator. He is assistant professor in the Anthropology department at the University of Denver. He maintains professional collaborations in Guatemala with the Instituto de Salud Incluyente (ISIS), the Centro de Estudios para la Equidad y Gobernanza en los Sistemas de Salud (CEGSS), and the Universidad del Valle de Guatemala (UVG).