Applicant Information

Applicant name: Julia Corwin
Project title: Valuable yet toxic: Global and local impacts of the electronic waste trade and recycling

Department: Geography, Environment and Society
College: CLA
Degree program: MA/PhD

Faculty advisor name & email: Vinay Gidwani gidwa002@umn.edu

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Dept. Head's email: braun038@umn.edu

Dean: James Parente
Dean's email: Paren001@umn.edu

How did you hear about this funding opportunity?
- VIP email
- The Brief
- Advisor
- Dept. email/newsletter
- OVPR website
- Other

Funding

Total amount of funding requested: $6,976

Executive summary (maximum 200 words)
Electronic waste is a relatively new but quickly expanding waste stream, as the deluge of new electronics causes ‘old’ devices to become rapidly obsolete. The global circulation and trade of electronic waste traverses dense and changing networks of informal and formal markets, and is negotiated through regulations at multiple sites and scales. In Delhi, India, informal recyclers have established a growing recycling industry, but with few workers’ protections for handling the simultaneously valuable and toxic materials in electronics. For my dissertation research, I will explore the shifting nature of the global electronics recycling trade, and the impacts of e-waste regulations on local recycling labor, worker health and environmental damage in the New Delhi metropolitan area. Preliminary research over the summer of 2013 will allow me to begin documenting changes to informal recycling work due to recently adopted national e-waste regulations, as well as identify a baseline of health and environmental problems amongst informal e-waste recyclers in Delhi. Through my research, I aim to highlight the intertwined nature of global and local health and environmental risks inherent to the movement and processing of e-waste.

Approvals

Check all appropriate approvals required for your proposal. Approvals must be obtained prior to receipt of funding. If you have applied for approval but have not yet received it, indicate that below.

IRB
- Yes
- No
- NA
- Application pending
- I will apply for IRB early this spring.

Other
- Yes
- No
- NA
- Application pending
- Specify:

Checklist

- The proposal is 1000 words or less excluding budget, biographies, references and citations.
- X The proposal includes a work plan with a specific timeline using months or quarters to identify work to be done and completion dates.
- X The proposal includes a 1-2 paragraph biography of the applicant and all co-investigators.
- X The budget form is complete including the funds sought for this project, other pending applications for this project, and the amount/source of matching or other funds.
- X The applicant’s faculty advisor is copied on the application email. Professional students w/o advisors check NA.
- X All necessary approvals are pending or received.
Background and importance of research

The Delhi metropolitan region is fast emerging as one of the major centers of electronic waste (e-waste) recycling in the world, with e-waste arriving from around India and the rest of the world to be broken down, separated and resold (Jha, 2008). These materials, from gold, copper, aluminum to plastics and glass, re-enter the commodity markets as resources and their sale provides income for 25,000 informal recyclers in Delhi (Chaturvedi, 2009). E-waste disposal has attracted the attention of labor and environmental advocates, who highlight the occupational health hazards and environmental degradation inherent to electronics recycling and disposal (Smith et al., 2006). The United Nations Environmental Programme (2009) estimates that approximately 40 million tons of electronic waste are disposed of each year globally, and e-waste disposal is growing “at a rate nearly three times faster than the overall municipal solid waste stream” (Lepawsky and McNabb, 2010, 178).

The trade in electronic waste is growing in parallel, as e-waste is frequently shipped to countries in the Global South with relatively lax labor and environmental regulations and enforcement. As much as 80 percent of the electronics in the United States designated to be recycled may be shipped to other countries for recycling and disposal (LaDou and Lovegrove, 2006). Informal recyclers in India have established a growing recycling industry due to the increase in e-waste. E-waste recycling work in India is done by hand, with few workers’ protections for handling dangerous and toxic materials (Gill, 2010; Agarwal and Wankhade, 2006).

International regulations, such as the Basel Convention, attempt to manage the health and environmental problems associated with informal e-waste recycling by stemming the disposal of e-waste in developing countries. In the United States, which has not ratified the Convention, independent certifications allow e-waste recycling companies to be certified as adhering to “the highest standard of environmental responsibility and worker protection” (E-Stewards). In India, the newly adopted E-waste Management and Handling Rules of 2011, in force as of May 2012, establish national environmental and labor regulations (Agarwal, 2012). However, the impacts of these many overlapping and often conflicting regulations, all of which claim to manage the harsh conditions of the e-waste trade and informal recycling, remains to be seen, and this very recycling labor continues to grow in India.

Research objectives

For my dissertation research, I will explore the shifting nature of the global electronics recycling trade, and the impacts of e-waste regulations on local recycling labor, worker health and environmental damage in the New Delhi metropolitan area. While recycling in India goes through ‘informal’ markets, Agarwal and Wankhade (2006) contend that the informal sector is not isolated from the formal economy and that “materials flow from the formal to the informal almost seamlessly” (237). I aim to highlight the intertwined nature of global and local health and environmental risks inherent to the movement and processing of e-waste.
In order to study the complex entanglements of the global e-waste trade, I approach my research through the following questions: 1) How do different e-waste regulations impact and shape one another, and in turn influence local e-waste recycling? 2) How are changes in global e-waste trade impacting informal recyclers’ health and local environmental problems? 3) What is the spatial architecture and reach of electronics trade and how are they formed by regulations on e-waste trade and handling?

**Methodology and work plan**

During the summer of 2013, I will spend three months in the Delhi metropolitan area to conduct preliminary fieldwork and establish a strong foundation for my dissertation research. Preliminary fieldwork will enable me to begin investigating my dissertation research questions, primarily by documenting changes to informal recycling work and the range and reach of electronics recycling in Delhi. Research in the summer of 2013 is particularly timely, as the recently adopted e-waste regulations in India portend many changes in e-waste recycling. I will thus be well positioned to conduct an in-depth study of the e-waste trade and informal recycling in Delhi for my dissertation research, which will begin in summer 2014.

Delhi is a rich site for studying the e-waste recycling trade because it receives electronic waste from across India and internationally, and over 90 percent of e-waste is managed through informal labor and markets. Several neighborhoods in and around Delhi specialize in the resale and recycling of electronics, such as Seelampur, which is known as India’s largest e-waste scrap market and handles over 50 percent of e-waste in the country (Kandhari and Sood, 2010).

My summer research will be accomplished through interviews with experts knowledgeable about informal e-waste recycling and visits to local recycling sites across Delhi. I will meet with policy-makers, environmental and labor organizations, waste industry employees, and informal recyclers, and visit many of the e-waste markets and recycling neighborhoods. During site visits, I will conduct preliminary interviews with e-waste recyclers regarding their health and environmental problems in recycling neighborhoods to identify a baseline of health and environmental problems amongst informal e-waste recyclers. These interviews and site visits will enable me to gain more knowledge about the range of the informal recycling infrastructure in Delhi and explore potential sites for dissertation research.

**Timeline**

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<td>Reestablish contact with local e-waste recycling experts; contact local policy-makers</td>
<td>Field work in Delhi metro area: key-informant interviews with policy experts; visits to recycling neighborhoods in Delhi; preliminary interviews and ethnographic research with e-waste recyclers; participant-observation of informal recycling</td>
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<td>Compile field notes; complete narrative and financial report for Consortium</td>
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Contribution

The global e-waste trade offers a unique opportunity to examine the impacts of regulations at various scales on recycling infrastructures and the urban environment. Interactions between laws at various scales, with varying levels of effectiveness, differentially impact people and the urban environment, making e-waste trade a productive site for an interdisciplinary inquiry into recycling and sustainable regulation and disposal of difficult waste streams. Through my research, I intend to contribute to the growing body of literature and policy work on the global waste trade, informal labor, and trade regulations.

References


Biography

I am a graduate student in the Department of Geography, Environment and Society at the University of Minnesota. My research and work interests have been in urban environmental issues, waste management and environmental justice for many years. I graduated magna cum laude from New York University in 2005 with a degree in Environmental Studies from the Gallatin School of Individualized Study. Before beginning my graduate work, I worked for the Department of Sanitation in New York City, where I managed several environmental programs. I focused primarily on waste reduction and recycling and worked closely with communities on local waste reduction projects. My work enabled me to understand the complex and often-contradictory waste politics characteristic of many cities throughout the world, and spurred me to continue exploring urban waste problems outside New York.

In the summer of 2012, I received funding from the Walter H. Judd International Graduate & Professional Fellowships for a preliminary research trip to India, where I began to focus on the recycling of electronic waste. Through my work in New York, I was familiar with the growing community drives to collect e-waste for recycling (NYC sponsored several while I worked for the Department of Sanitation), but my trip to Delhi allowed me to witness informal recycling and the complex interconnections in e-waste trade and recycling. In preparation for fieldwork in India, I have been studying Hindi at the University of Minnesota, and I anticipate departing for my dissertation fieldwork in the summer of 2014.
## Project Title: Valuable yet toxic: Global and local impacts of the electronic waste trade and recycling

### Instructions: Provide justification along with costs.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description &amp; justification</th>
<th>Requested funding</th>
<th>Matching/other funding</th>
<th>Source</th>
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<tbody>
<tr>
<td>1 Your stipend</td>
<td>200 hours at $18.38/hour (current graduate assistant rate in Geography department)</td>
<td>$3,676</td>
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<td>2 Other personnel</td>
<td>Hindi interpreter, 20 hours at $10/hour</td>
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<td>personal funds</td>
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<td>3 Speaker honoraria</td>
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<td>4 Supplies &amp; Services</td>
<td>International health insurance ($100 for 3 months); Cellular phone service ($100 for 3 months)</td>
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<td>5 Equipment</td>
<td>Digital voice recorder ($80); Cell phone ($20)</td>
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<td>6 Travel</td>
<td>Roundtrip flight from Minneapolis to New Delhi, Approx June 1 - August 30 ($1950); Housing in Delhi ($350/month for 3 months, June-August)</td>
<td>$3,000</td>
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**Subtotal research expenses (2-6)** $3,300 $200

**TOTAL BUDGET** $6,976 $200