Consortium on Law and Values in Health, Environment & the Life Sciences
2010-11 Student Proposal Cover Page

Applicant Information

Applicant Name: Ilona Moore

Project Title: Paradox of Plenty: Hunger, food security, and the making of India’s Gene Revolution

Department: Geography
College: CLA

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How did you hear about this funding opportunity? It was advertised in an email I received from the Consortium

Funding

Total amount of funding requested: $10,000

Executive summary (maximum 200 words)

I am seeking funds to support the continuation of my dissertation fieldwork in India. The requested funds will be used to support travel and research expenses between September 2010 and January 2011. During this time I will be conducting research examining agricultural technologies in India. This research has both a historical and contemporary aspect. I maintain that it is necessary to address not only the contemporary policies addressing biotechnology, but also to understand the historical antecedents of these policies and how that framework continues to define the trajectory of agricultural development. My research does this through an interdisciplinary approach of multiple methods. For the historical portion of my research I conduct archival work on the Green Revolution of the late 1960s. I use textual, discourse, and policy analysis to trace the introduction and importance of agricultural technologies in India. In the contemporary portion of my research I rely on in-depth interviews with government officials and ethnographic work with various stakeholders to gain insight into policy processes through which genetically modified crops have come into India and their lineage with Green Revolution era technologies. Through this research I will draw out the continuing imaginations and effects of agricultural technologies in India.

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 Status
IRB approval granted December 2008

☐ IACUC Status

☐ Other Status

Checklist

☐ The proposal is 1000 words or less excluding budget, biographies, references and citations.
The proposal includes a work plan with a specific timeline using months or quarters to identify work to be done and completion dates.

The proposal includes a 1-2 paragraph biography of the applicant and all co-investigators.

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.

The applicant’s faculty advisor is copied on the application email. Professional students w/o advisors check NA.

All necessary approvals are pending or received.
Ilona Moore  
*Consortium on Law and Values in Health, Environment & the Life Sciences*

**Paradox of Plenty:**  
*Hunger, food security, and the making of India’s Gene Revolution*

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**Nature and importance of the research**

Conventional narratives of development and food security assume that with sufficient food supplies hunger and malnutrition will be alleviated. My research suggests that the current food situation in India calls the coherence of these narratives into question. While surplus state food stocks are overflowing at three to four times their capacity, per-capita food consumption is the lowest in 60 years, and the majority of the population (50% to 90%) is chronically food insecure and/or malnourished.

In this context of pervasive food insecurity amidst plenty, the Government of India claims that new genetically modified (GM) agricultural biotechnologies are necessary to ensure food security for the nation and feed the population. While the government claims that agricultural biotechnology is “non-negotiable,” the process surrounding the approval of GM food crops has been highly controversial.

Scientists, geneticists, medical professionals, and members of civil society are particularly concerned with the choice of the first food crop to be approved, Bt brinjal (eggplant). While proponents of the project (namely, the Government of India, agribusiness, and the US Government) insist that the crop is safe, has been thoroughly tested, and is quite simply necessary to ensure food security and feed India’s growing population, others claim the crop and the processes surrounding its approval violate the Cartagena Protocol and the precautionary principle. Their concern is with the unknowable effects of modifying eggplant in its country of origin.1 Secondly, there are others who are concerned with the empirical impacts on human and animal health resulting from any GM crops in India’s intensively utilized landscape.2 Other experts who focus on policy articulate different, broader, concern; they hold

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1 With well over 2,000 varieties, India houses the world’s genetic diversity in eggplant, a fact which makes some segments of the scientific community and civil society particularly cautious about GM eggplant for they see the possibility of contaminating this genetic history.

2 Bt cotton is currently the only GM crop grown in India and portions of the country are still reeling from its impact. The effects of growing Bt cotton — ranging from farmers’ suicides resulting from massive indebtedness incurred to purchase the inputs, to government documented deaths of farm animals from grazing on Bt cotton fields, to new forms of rashes and sores on farm laborers who
that GM crops simply are not appropriate for India’s labor-intensive economic and social infrastructure.³ A fourth party, which includes regional government officials, expresses concern about the social costs of the increasing use of chemicals in the ecosystem (these social costs include long-lasting downstream health effects, and the burden that the purchase of expensive inputs places on farmers).⁴ The above interests and other civil society groups have been petitioning the government to rescind its approval of Bt eggplant until more thorough testing can be completed.

The government, for its part, claims that it takes all of these concerns to heart, and that if farmers and the public do not want GM eggplant then its approval will be withdrawn. While the government seemingly presents the issue as a question of the best interests of the nation to be resolved democratically, dissenting government scientists on the Genetic Engineering Approval Committee (GEAC) and advising the Supreme Court insist that disagreement and critical evidence have been silenced and that the reasons that Bt brinjal was pushed through are not about food security but rather are economic and geopolitical. They claim it is in response to pressure from US based multi-national agribusiness.

The issue of Bt brinjal is discussed across sectors of society and the mainstream media — for not only does eggplant have a singular cultural significance in India, it also is seen by proponents and opponents alike as a gateway crop: since it is the first GM food crop that would be grown in the country its path is expected to set important precedents.

**Innovative Interdisciplinary contribution**

While there is considerable scholarship that addresses GM crops and the controversies surrounding their acceptance and use, this literature focuses largely on cases in the US, Europe,
and Africa. However, the situation in India is distinct; the reasons articulated for the necessity of these crops and the nature of the concern do not easily fit within existing scholarly accounts. In India, these narratives are deeply imbricated with imaginations of “the nation,” its sovereignty, as well as the nation’s duty and ability to ensure sufficient food for the population. While these broad imaginations are held in common, unsurprisingly, the ways that these concerns are interpreted and understood as to be ensured differ starkly.

My research attends to the processes through which agricultural technologies have become the dominant approach to ensuring these concerns. As such, I examine the policy process surrounding the introduction of agricultural technologies in India as a lens into how these imaginations themselves have come into being, are mobilized, and in turn sustain the need for new agricultural technologies. Specifically, I focus on the articulation of concerns about national food security and the ostensible necessity of new technologies to ensure this food security. I maintain that to understand this process it is necessary to excavate the historical pathways which have laid the groundwork for agricultural biotechnology’s emergence as the answer to ensuring the country’s food security and addressing the political problems of persistent and widespread chronic hunger.

My research does this through an interdisciplinary approach combining multiple methods: I rely on in-depth semi-structured interviews and ethnographic work to gain insight into the contemporary policy process and into the views of competing stakeholders; through archival research I investigate the antecedents of this policy process and use textual and discourse analysis to code and analyze these documents; finally, I employ a policy network analysis and conduct a genealogy of the narratives and imaginations invoked.

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5 See Appendix 1 for more detail
6 The historical documents I use to trace the policy process include the following: official Five Year Plans and Annual Plans as well as the Planning Commission of India’s reports and mid-term assessments of these plans. Planning Commission notes, records and working group documents, Parliamentary debates and motions, reports and records of the Ministry of Agriculture and its subsidiaries (including the Indian Council on Agricultural Research [ICAR] and the Indian Agricultural Research Institute [IARI], both of which are integrally involved in the Green Revolution and the ongoing Gene Revolution). In addition I rely on reports, publications and records of the Ford and Rockefeller Foundations. In the contemporary era I also utilize materials from the Department of Biotechnology.
7 By a genealogy I mean a historically oriented investigation of how the understanding and usage of seemingly self-evident concepts – such as ‘food security’ – are shaped through contingencies of power relations.
Timeline

I am currently conducting fieldwork in India; I will return to Minnesota for the summer to compile my data and to prepare and discuss my continued research plan with my committee. In September I will resume fieldwork in India for a period of five months. Over the course of the fall semester I will complete my ethnographic and archival fieldwork documenting the influences, actors, and rationales deployed in agricultural technology policy processes in accordance with my research plan (a more detailed list of my research sources, calendar and completion dates is included in Appendix 1).

Through this research I contribute to scholarship concerning health, the environment, and life itself via examining the policy processes through which ethical and political problems of governance (in this case, food distribution) come to be articulated in the language and practice of agricultural science, and what the effects of such policies are.

[996 words]

Bibliography
### Appendix 1: Annotated Research Timeline, to be completed by the following dates:

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
</table>
| **Spring Semester (January-May) 2010**<br>Fieldwork in India (funded by U MN Grad School Thesis Research Grant) | Trace the policy process through which Bt Brinjal [eggplant] originated, was tested, and came to be approved (dating back at least five years) through interviews, ethnographic, and archival research.  
- Attend and document public hearings on Bt Brinjal.  
- Conduct interviews with experts (including those testifying at the above hearings).  
- Conduct interviews with USAID and USDA mission officers in Delhi regarding the US’s stance (as the major international proponent of) agricultural biotechnology.  
- Interviews at agribusiness affiliated NGOs, lobbies and think-tanks  
- Conduct archival research on the narratives around agricultural technology during India’s Green Revolution (~1965-1970) |
| June 2010 | Code field-notes  
Compile and analyze archival and ethnographic data  
Transcribe and analyze interviews |
| July 2010 | Produce complete outlines of the dissertation chapters and discuss in meeting with my committee |
| August 2010 | Create detailed research plan for the remaining data to be collected in the fall semester (based on the data collected and analyzed and the gaps therein). Meet with my committee to have research plan approved. |
| **Sept 2010**<br>Consortium funding | Return to India,  
Gain access to archives and other necessary institutions  
Resume archival research  
Set up interviews with government and NGO officials  
- Conduct interviews with non-governmental (NGO) experts on the policy process surrounding agricultural biotechnology’s emergence and approval.  
- Conduct interviews with agribusiness officials (regarding Bt Brinjal and other GM crops)  
- Interview government officials at public meetings on the role of GM food crops in ensuring India’s food security  
Continue archival research and analysis |
| Oct 2010 | Conduct further interviews government officials:  
- Ministry of Agriculture  
- Department of Biotechnology |
| Nov 2010 | Conduct interviews:  
- Planning Commission  
- Food Corporation of India  
- USAID and USDA  
Transcribe and code interviews throughout this process  
Complete archival work |
| Dec 2010 | Complete interview schedule and continue interview transcription and analysis |
| Jan 2011 | Conduct follow-up interviews at US bureaus and institutions in Washington DC (USAID, USDA)  
Compile and analyze fieldwork archival and interview material  
Begin drafting the dissertation, complete drafts of two chapters |
| Summer 2011 | Complete drafts of two more chapters |
| 2011-2012 | Complete and defend the dissertation, apply for jobs. |
Biography

My dissertation project on the politics of food security and agricultural technology is shaped by social and academic questions that I have navigated over the past decade. I have a longstanding interest in multiple aspects of the distribution and production of food. My questions — from the uneven effects of pesticide regulation to the sustainability of industrial agriculture — center around issues of inequality, distribution and the role of policy. My understanding of these concerns shifted and expanded greatly through engagements with rural development projects when I studied abroad in North India in 2000-2001. During this period I was drawn into questions around development, which I continue to find compelling because of the tensions and contradictions between the promise of science and social improvement policies and their actual (and generally less successful) results. After I graduated from college I returned to South Asia in 2003 on a Fulbright Fellowship. I spent the academic year in Bangladesh conducting research on development policy. Building on my previous research and questions, I looked at and beyond development policies, seeking to understand how particular conceptions of development became part of the national imagination — a theme I continue to work through in my dissertation. The profound starkness of pervasive poverty alongside fabulous wealth that seemed to define Dhaka posed constant questions of how and for whom projects of development are conceived and of the relation between production and distribution policies. The small but persistent details of naturalized inequality that are evident, for example, in the astonishing levels of malnutrition in one of the most fertile places on earth, have shaped my research questions.

I entered graduate school hoping to pursue a more systematic engagement with some of the overarching questions that my experiences abroad and my studies had opened up. I chose Geography because of its interdisciplinary nature, which allows me to combine questions, approaches and methods from across the social sciences, humanities, and natural sciences. This flexibility has enabled me to craft a dissertation project that brings together many of my longstanding concerns with questions of social justice, development, and inequality through an examination of the social and political effects of agricultural science policies. Thinking through how to approach such contradictions, I became particularly interested in agricultural policies because the contradictions around development seem to crystallize in the paradoxes surrounding access to food. The case of India is particularly compelling. The facts seem straightforward and simple: India has some of the largest stores of rice and wheat on the planet at the same time as it has the highest rate of malnutrition and chronic hunger, which begs questions of whether such a situation is a predictable, even banal, effect of development policies. In examining how agricultural policies have played out, my research engages with ethical questions central to the appeal and promise of science, and how agricultural science can be mobilized to address hunger within a given political economic context. On a logistical level, I have prepared myself for my fieldwork through graduate extensive seminars exploring my research concerns and with three successive FLAS fellowships which allowed me to complete the three years of Hindi offered at the University of Minnesota.
### Project Title: Paradox of Plenty: Hunger, food security, and the making of India’s Gene Revolution

#### Instructions provided below.

<table>
<thead>
<tr>
<th>Personnel costs</th>
<th>Description &amp; justification</th>
<th>Requested funding</th>
<th>Matching/other funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Your salary (stipend)</td>
<td>I will be conducting this research for five months in India. Over these 20 weeks I will be working around 40 hours a week; much of this time will be spent contacting sources, setting up interviews, and establishing other necessary background work to completing my research. The amount of time spent conducting the actual research (interviews, ethnography, archival work) is estimated to be at minimum 400 hours.</td>
<td>$5,400</td>
<td></td>
</tr>
<tr>
<td>2 Other personnel</td>
<td>n/a</td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>3 Other personnel</td>
<td>n/a</td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>4 Other personnel</td>
<td>n/a</td>
<td>$0.00</td>
<td>personal funds</td>
</tr>
</tbody>
</table>

#### Personnel Subtotal

| | Amount | | Source |
|-----------------|--------|------------|
| Personnel Subtotal | $5,400.00 | $0.00 | $400.00 |

6 Speaker Honoraria

#### Supplies & Services

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
</tr>
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<tbody>
<tr>
<td>necessary research expenses: books, reports, and published records</td>
<td>$135</td>
</tr>
<tr>
<td>registration fees with various archives and universities, necessary to gain access as a foreign scholar [including Nehru Memorial Archives, National Archives and Jawaharlal Nehru University]</td>
<td>$125</td>
</tr>
<tr>
<td>translation services as necessary</td>
<td>$125</td>
</tr>
<tr>
<td>photocopying documents in the Archives</td>
<td>$80</td>
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</table>

8 Equipment

#### Travel

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) roundtrip airfare MSP -&gt; New Delhi, India: $1325</td>
<td>$1,325</td>
</tr>
<tr>
<td>(2) lodging in New Delhi (sublet a room in a shared apartment in South Delhi) $325 month for 5 months = $1625</td>
<td>$1,625</td>
</tr>
<tr>
<td>(3) daily transport (buses, metro, rickshaws) $2.50/day for 5 months = $ 375</td>
<td>$375</td>
</tr>
<tr>
<td>(4) transportation between research cities within India (via train)</td>
<td>$300</td>
</tr>
<tr>
<td>(5) food and basic living necessities $7 day for 5 months = 1050</td>
<td>$1,050</td>
</tr>
<tr>
<td>* note: the per diem rate listed for New Delhi on the website given below is $486; clearly as I will be there long term I will be able to live on a fraction of this rate.</td>
<td></td>
</tr>
</tbody>
</table>

#### Subtotal research supplies, equipment, travel, other

| | Amount | | Source |
|-----------------|--------|------------|
| Subtotal research supplies, equipment, travel, other | $5,140.00 | $0.00 | $140.00 |

11 TOTAL BUDGET

| | Amount | | Source |
|-----------------|--------|------------|
| TOTAL BUDGET | $10,000.00 | $0.00 | $540.00 |
**Consortium on Law and Values in Health**, Environment the Life Sciences

**Budget for Student Proposals**

1. Stipend justification. You must justify the amount of stipend you are requesting by identifying the number of hours you plan to work on the project and the hourly wage used for research assistants in your department. Include fringe benefits.

2. Stipend justification. You must justify the amount of stipend you are requesting by identifying the number of hours you plan to work on the project and the hourly wage used for research assistants in your department. Include fringe benefits.

3. Identify all other personnel to be paid from this grant including interpreters, travel guides, etc. and justify their salary by identifying the number of hours they will work and the hourly wage. What is the hourly wage based on?

4. For colloquia, identify the number of speakers and the amount of honoraria you will provide.

5. Supplies and services. List out all supplies and their estimated costs. Explain in line 7 or in the body of your proposal what the supplies will be used for.

6. Travel costs must include a description of the purpose of the travel, start and stop dates of travel, transportation costs, housing costs, and allowable per diem (use University rates found at http://travel.umn.edu).