Corrosion of Port Transportation Infrastructure in the Duluth-Superior Harbor

Also Inside:
- Detecting Racial Profiling in Minneapolis Traffic Stops
- Neighborhood Responses to the Foreclosure Crisis
- Speeding Road Construction through Efficient Contract Design
- Using Spoken Word and Hip Hop Subject Matter in Pre-College Writing Instruction
- Perceptions and Practices of Minneapolis Farmers’ Market Customers
In This Issue:

- From the CURA Director ................................................... 3
- Assessing the Role of Microorganisms in the Accelerated Corrosion of Port Transportation Infrastructure in the Duluth-Superior Harbor .................................... 4
- Detecting Racial Profiling in Minneapolis Traffic Stops: A New Approach ............................................ 11
- New CURA Reporter Publication Schedule ....................... 17
- 2009–2010 Faculty Research Awards .................................. 18
- Neighborhood Responses to the Foreclosure Crisis ............. 19
- Word Up: Using Spoken Word and Hip Hop Subject Matter in Pre-College Writing Instruction .................. 26
- Speeding Road Construction: Efficient Contract Design Can Lead to Faster Repairs, Fewer Delays, and Lower Commuter Costs .................................................. 32
- Project Funding Available from CURA ............................. 39
- Local Food and Diversity in Public Space: A Study of the Perceptions and Practices of Minneapolis Farmers’ Market Customers ................................................. 40
- Local Policy Partnership Spotlights New Research Areas ...... 51
- In Memoriam: Barbara Lukermann ................................. 52

Photo on Cover: A freighter and tug in the Duluth-Superior harbor on Lake Superior. Photo courtesy of Visit Duluth and Seaquest Productions.
From the CURA Director

Last fall, the Center for Urban and Regional Affairs turned 40 years old. Created as part of the University of Minnesota’s response in the late 1960s to political and social upheaval taking place in the Twin Cities and elsewhere, CURA has established itself over the years as the flagship of the University’s urban presence. For more than 30 of these years, CURA has benefited from the leadership of Professor Tom Scott. Tom stepped down in June to enjoy a phased retirement from CURA and the University. I have been involved with CURA for two decades and can speak firsthand about Tom’s steady and calm leadership, as well as his critical support of community-based research and outreach. Under Tom’s leadership, CURA has become a trusted partner for hundreds of community-based organizations and government agencies in the region, and has produced literally thousands of projects by faculty and student researchers focused on and in response to the needs of community members, all the while serving the research interests of faculty members and helping to train graduate and undergraduate students. It is a legacy that Tom can be very proud of and one that reflects the very best of what a land-grant university can be.

We may not have riots in the streets of our central cities as we did in the 1960s when CURA was created, but we do face considerable economic, social, and political challenges today. The economic collapse of the past year threatens the vitality of all of our communities. The most significant challenges we face—the financial crisis, home foreclosures, immigration, poverty, school desegregation, sprawl, and environmental sustainability—all have significant urban dimensions. Our region, the Twin Cities metropolitan area, and the upper Midwest more generally offer the best and the worst in this respect. We benefit from an active civic sector, with energetic and effective neighborhood and community organizations, an extensive and committed foundation and philanthropic community, and good government at the local, regional, and state levels. Minnesota and the Twin Cities lead the way on many public policy issues. At the same time, our region suffers from suburban and exurban sprawl, and significant racial disparities existing with respect to poverty, homeownership, and lending practices. We have a growing achievement gap in our schools, neighborhoods swamped with home foreclosures, and environmental challenges that threaten our lakes and waterways. The need for a vital and engaged CURA, helping to guide the considerable resources of the University of Minnesota in response to these challenges, is as great or greater today than it ever has been.

During the past two years, CURA has completed an extensive self-study as well as a formal external review of its operations. In light of this thorough review of past accomplishments and directions, my first step as director of CURA has been to initiate a strategic planning process. Since July we have been engaging a range of stakeholders in conversations about CURA’s on-going role in the University of Minnesota’s urban agenda. By the end of September we hope to have a set of strategic objectives to guide our work over the next five to seven years. We look forward to working with you as we continue to set these goals and, more importantly, as we work to deliver on them.

Edward G. Goetz
Professor and Director, CURA
The economies of coastal communities around the Great Lakes have historically been dependent upon maritime transportation. Urban ports and waterways continue to accommodate expanding trade, growth of tourism, and recreational boating. Even in this challenging economic period, planned expansions in the iron-ore, slab-steel, low-sulfur coal, and nonferrous metals industries and growing tourism indicate that the need for adequate port infrastructure will increase and become even more important to Minnesota’s economy over the next decade. Yet, Lake Superior harbors and the maritime industry are facing a serious problem: accelerated corrosive loss of port infrastructure.

Steel sheet- and H-pilings used for docks, bridges, and bulkheads have been reported to be corroding at an accelerated rate in the Duluth-Superior harbor. The increased rate of corrosion appears to have begun in the late 1970s, and will require expensive replacement of port facilities if the cause and possible remedies cannot be identified. Approximately 20 kilometers of steel sheet-pilings appear to be affected in the Duluth-Superior harbor, which may cost more than $200 million to replace. When Lake Superior water levels dropped in 2007, the extent of piling corrosion was clearly visible on numerous steel structures in the harbor.

This article highlights the extent of corrosion of port transportation infrastructure in the Duluth-Superior harbor and describes the methodology and findings from our laboratory’s initial studies of the possible role of microorganisms in this corrosion. Our goal was to determine if differences in microbial communities between two corroding structures and a less-affected site indicated the participation of bacteria in this accelerated corrosion process. Our research group is continuing to actively investigate the cause of this problem through field and laboratory studies.

Assessing the Role of Microorganisms in the Accelerated Corrosion of Port Transportation Infrastructure in the Duluth-Superior Harbor

by Randall E. Hicks
The research upon which this article is based was supported in part by a grant from CURA’s Faculty Interactive Research Program. Additional support was provided by the Duluth Seaway Port Authority, the Great Lakes Maritime Research Institute, the Minnesota Sea Grant Program, and the U.S. Army Corps of Engineers.

First Observations of Corrosion on Duluth-Superior Harbor Port Pilings

Chad Scott, from AMI Consulting Engineers in Duluth, Minnesota, was one of the first persons to recognize the corrosion problem in the Duluth-Superior harbor when he saw football-size holes in steel pilings at the U.S. Coast Guard dock during 1998. In September 2004, the U.S. Army Corps of Engineers, the Duluth Seaway Port Authority, and the Minnesota and Wisconsin Sea Grant Programs convened an expert panel from the U.S. Army Corps of Engineers, universities, consulting firms, and the Naval Research Laboratory to evaluate this corrosion issue. This panel described the corrosion as “pock marks primarily in the 4 feet just below the water surface” extending “down to about 10 feet, but decreasing from 4 feet below the surface to 10 feet. The corroding pock marks are covered by an orangish coating that tends to cover the corroded pit.” The workshop culminated in a report for the U.S. Army Corps of Engineers that recommended a course of action for addressing the problem.

This expert panel identified and ranked 12 possible causes of the corrosion (Table 1), and concluded that water chemistry, dissolved oxygen content, and dissolved chlorides from de-icing salts appeared the most likely of the 12 causes discussed to be responsible for the accelerated corrosion. A lack of data made it unclear whether microbiological factors or functional harbor changes were unduly influencing corrosion in the harbor. The panel recommended “immediately quantifying the corrosion rate, conducting a water chemistry analysis, checking for microbiologically influenced corrosion, testing for stray DC currents, and assessing the condition of critical steel structures.”

The U.S. Army Corps of Engineers formed a working group of governmental, private, and university partners in 2005 who were concerned about this problem. I became part of this working group in late 2005 at the request of the Duluth Seaway Port Authority and the Minnesota Sea Grant Program. Subsequently, the federal government awarded funding to the U.S. Army Corps of Engineers, and the State of Minnesota awarded funds to the Duluth Seaway Port Authority, to study this problem further. These groups used much of the initial funding to assess the condition of federal and private structures in the harbor, but also measured instantaneous corrosion rates and some water chemistry parameters, tested for stray DC currents, and collected preliminary samples for microbiological analysis. Since then, stray current from high-voltage DC power lines has been eliminated as a possible cause of the corrosion.

Nature of the Accelerated Corrosion

Most of the corrosion on pilings in the Duluth-Superior harbor is confined to the first 1.5 meters below the waterline and decreases in magnitude from 1.5 to 3 meters below the surface. In addition, extensive zebra mussel colonization occurs on the steel pilings below 3 meters to the bottom of the pile, where little or no corrosion is observed. The corroding steel pilings have a rusty appearance characterized by orange, blister-like, raised tubercles on the surface. Corrosion tubercles are hollow mounds of corrosion products and deposits that cap localized regions of metal loss. These tubercles vary in diameter from a few millimeters to several centimeters and, when removed, reveal large and often deep pits (6 to 10 millimeters) in the steel, which is sometimes perforated.

Three lines of evidence indicate that the rate of steel corrosion is faster than normally expected in the Duluth-Superior harbor. First, the panel of experts indicated that the pit depths in steel pilings within this harbor are deeper than the average pit depths for comparable corroding materials in freshwater. Second, in 2006, Bushman & Associates, Inc., an independent consulting firm hired by the U.S. Army Corps of Engineers, measured instantaneous corrosion rates of 153 to 165 micrometers per year (µm/yr) at sites that appeared most affected by corrosion. These instantaneous corrosion rates were considerably higher (~4 to 13 times) than normal (13 to 38 µm/yr according to Bushman & Associates), suggesting that these high rates could only be explained by some accelerating factor, such as microbiologically influenced corrosion (Table 2). Upon closer inspection, these data also revealed a gradient of corrosion from the entry to the Duluth-Superior harbor at Lake Superior toward the inner part of the harbor, where the most extensive corrosion has been seen. These corrosion rates also varied with seasonal temperature changes, which is consistent with biological and chemical processes.

Finally, Chad Scott, from AMI Consulting Engineers, noticed that orange corrosion tubercles rapidly appeared on unprotected steel sheet-pilings that were replaced at the Superior entry to the harbor during June and July 2006. By September, corrosion pits were already apparent below the corrosion tubercles on these new steel sheet-pilings.

The pattern of instantaneous corrosion rates was similar to that of differences in water chemistry within the Duluth-Superior harbor in 2006 (Table 2). Sulfate concentrations were 5 to 8 times higher and the instantaneous corrosion rates were 3 times greater at areas in the inner harbor compared to the entries to the harbor where the sulfate concentrations and instantaneous corrosion rates were both lower. The sulfate concentrations and instantaneous corrosion rates were also higher (2 and up to 4 times, respectively) in the inner harbor compared to the St. Louis River at the head of the harbor. Similarly, the chloride concentrations were twice as high in the inner harbor than at the entries to the harbor or in the St. Louis River. These results indicated that local water quality was at least related to the corrosion and

Table 1. Estimated Importance of Possible Causes of Harbor Corrosion

<table>
<thead>
<tr>
<th>Possible Causes of Corrosion</th>
<th>Assessment of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water chemistry</td>
<td>Significant</td>
</tr>
<tr>
<td>Temperature</td>
<td>Not significant</td>
</tr>
<tr>
<td>Dissolved oxygen content</td>
<td>Significant</td>
</tr>
<tr>
<td>Dissolved chlorides from de-icing salts</td>
<td>Significant</td>
</tr>
<tr>
<td>Microbiologically influenced corrosion</td>
<td>Not clear (further analysis)</td>
</tr>
<tr>
<td>Stray current corrosion</td>
<td>Not significant (but check)</td>
</tr>
<tr>
<td>Storm water runoff/sewage discharge (related to water chemistry)</td>
<td>Not significant (of itself)</td>
</tr>
<tr>
<td>Ballast discharge</td>
<td>Not significant</td>
</tr>
<tr>
<td>Zebra mussels</td>
<td>Not significant</td>
</tr>
<tr>
<td>Metallurgy of steel</td>
<td>Not significant</td>
</tr>
<tr>
<td>Water electrolysis from power distribution</td>
<td>Not significant</td>
</tr>
<tr>
<td>Functional changes within the harbor</td>
<td>Not clear (bear in mind)</td>
</tr>
</tbody>
</table>

may directly or indirectly influence the corrosion of steel in the harbor. The instantaneous corrosion rates measured in 2006 tended to be greater at sites with high sulfate concentrations, suggesting that sulfate-reducing bacteria might be involved in the corrosion process.

A scanning electron microscope examination of corroded sheet steel removed from a dock in the harbor during December 2005 revealed a complex community of microorganisms attached to the surface of the corroding steel, composed of bacteria, filamentous algae, and diatoms, a type of single-celled algae. There was also extensive coverage of bacteria-sized cells in pits under the rusty tubercles. Microbiologically influenced corrosion is a general term for corrosion resulting from the presence and activities of microorganisms. Microbiologically mediated reactions can alter both rates and types of electrochemical reactions, and microorganisms can cause such things as pitting, crevice corrosion, anaerobic conditions in biofilms, and increased galvanic corrosion (see the workshop report by Marsh et al., 2005).

The visual appearance of the Duluth-Superior harbor corrosion is consistent with the appearance of corrosion caused by iron-oxidizing bacteria and similar to corrosion of steel structures recently observed at other harbors in Lake Superior. Soils, bedrock, and groundwater in the vicinity of this harbor are rich in iron, and neutral pH iron-oxidizing bacteria can be found in seeps on the hillside overlooking the Duluth-Superior harbor. Microbiologically influenced corrosion is rarely caused by a single microbial group, however, but is more often caused by consortia of microbes including iron-oxidizing and sulfate-reducing bacteria. The corrosion seen in the Duluth-Superior harbor is also similar to accelerated low-water corrosion reported during the past decade on marine steel-pilings in the United Kingdom and Baltic Sea, which has been thought to be accelerated by the action of sulfate-reducing bacteria.

### Table 2. Estimated Instantaneous Corrosion Rates and Water Quality in the Duluth-Superior Harbor in 2006

<table>
<thead>
<tr>
<th>Site</th>
<th>Location</th>
<th>Corrosion Rate1 (µm/yr)</th>
<th>Sulfate2 (mg/L)</th>
<th>Chloride2 (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duluth Entry</td>
<td>Entry</td>
<td>53</td>
<td>4–6</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Superior Entry</td>
<td>Entry</td>
<td>46</td>
<td>6–16</td>
<td>10–11</td>
</tr>
<tr>
<td>DECC</td>
<td>Outer Harbor</td>
<td>—</td>
<td>12</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Cutler Magner</td>
<td>Outer Harbor</td>
<td>117</td>
<td>19</td>
<td>14</td>
</tr>
<tr>
<td>DSPA Berth 4</td>
<td>Outer Harbor</td>
<td>99</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td>Midwest Energy</td>
<td>Inner Harbor</td>
<td>155</td>
<td>32</td>
<td>21</td>
</tr>
<tr>
<td>Hallett Dock 5</td>
<td>Inner Harbor</td>
<td>163</td>
<td>30</td>
<td>21</td>
</tr>
<tr>
<td>Oliver Bridge</td>
<td>St. Louis River</td>
<td>132</td>
<td>15</td>
<td>14</td>
</tr>
</tbody>
</table>


### Research Methodology and Analysis Results

This section briefly describes our methodology and the results of our analysis.

**Collection of Samples.** We collected samples from the surfaces of steel pilings in the Duluth-Superior harbor in August and September 2006 to examine microscopically, to isolate iron-oxidizing bacteria, and to extract DNA from biofilms to compare bacterial communities on these steel surfaces and identify their members. We chose to compare two sites in the inner harbor, where steel corrosion was severe, to a less affected site at the Duluth entry to the harbor. A commercial diver collected these biofilm samples from corroded structures approximately 1 meter below the waterline at Hallett Dock 5 (August 1 and September 14) and the Midwest Energy dock (August 15) in the harbor and at the Duluth entry (September 15), using a syringe-brush sampler (Figure 1).

**Examination of Samples for the Presence of Microbial Biofilms.** The first goal of our research was to examine...
corroded areas on steel pilings to verify the presence of microbial biofilms and evaluate the biological complexity of these microbial communities. We stained one portion of the samples with a fluorescent dye (DAPI) and examined the stained samples using epifluorescence microscopy. Samples scraped from the corroded steel surfaces at two inner harbor sites, the Hallett Dock 5 and Midwest Energy docks, demonstrated that complex microbial biofilms composed of filamentous algae, diatoms, and various bacteria covered the steel surfaces and corrosion tubercles. These results supported the earlier scanning electron microscope evaluation of corroded steel removed from the harbor in late 2005. Our collaborator at the Naval Research Laboratory, Brenda Little, examined samples collected in 2006 with an electron microscope, which confirmed the presence of bacteria on surfaces and even possibly embedded in the orange tubercles covering the corrosion pits.

**Examination of Samples for the Presence of Iron-Oxidizing Bacteria.**

Our second goal was to isolate and identify iron-oxidizing bacteria that might be present in the samples recovered from steel structures at the two inner harbor sites, as well as the Duluth Entry that is less affected by corrosion. Using another portion of the samples collected, we enriched and isolated iron-oxidizing bacteria by an iron sulfide gradient-tube culturing technique. After 14 to 21 days, we removed samples from individual bands of the microbial growth that had formed in these gradient tubes and then extracted, amplified, and sequenced the DNA for one gene (16S rRNA) in the sample’s bacteria. We then compared this bacterial DNA sequence information with the sequences of known bacteria from a public database to help identify the closest bacterial relative.

We isolated an iron-oxidizing bacterium, which we found to be most similar (96% similarity) to *Sideroxydans lithotrophicus* by the partial 16S rRNA gene sequence, from corroded areas of the Hallett Dock 5 and the Midwest Energy dock sites. To date, we have not isolated this bacterium from the site at the entry to the Duluth-Superior harbor that is less affected by corrosion. We verified the presence of this bacterium in the microbial biofilms from the corroded sites by comparing its DNA fingerprint with the DNA fingerprints of bacterial communities collected from corroding structures in the inner harbor. *S. lithotrophicus* is a microaerophilic γ-Proteobacterium that oxidizes iron (converting Fe^{2+} to Fe^{3+}). Iron-oxidizing
bacteria have been demonstrated to cause corrosion of steel in other environments, so isolating a bacterium similar to *S. lithotrophicus* from these corroding steel structures was certainly intriguing. However, microbiologically influenced corrosion is rarely caused by a single microbial group, but is instead more often caused by consortia of microbes (including iron-oxidizing and sulfate-reducing bacteria).

**Comparisons of Microbial Biofilms from Different Sampling Sites.** Our third goal was to determine if microbial communities attached to corroding steel were different than communities attached to steel at the less-corroded Duluth entry site. We used total DNA extracted directly from microbial biofilms for a community DNA fingerprinting analysis called terminal restriction fragment length polymorphism analysis (T-RFLP), and for developing bacterial clones whose DNA could be sequenced to help identify bacterial members of these microbial communities.

We used T-RFLP analysis to compare bacterial biofilm communities collected from several sites. This analysis indicated that bacterial communities on corroding steel-piling at sites in the most affected part of the Duluth-Superior harbor were different from bacterial communities on steel sheet-piling at the Duluth entry, a less affected site (Table 3). At Hallett Dock 5, the composition of bacterial communities associated with corrosion tubercles was even different from bacterial communities on adjacent areas of the steel piling where corrosion tubercles were not present (data not shown).

We amplified DNA from the bacterial 16S rRNA gene in four microbial community samples from the Hallett Dock 5 dock and two samples from the Midwest Energy dock to create a small bacterial clone library and then to identify the major bacterial groups associated with corroded steel-piling materials in the Duluth-Superior harbor during late summer. We partially sequenced small DNA fragments from these bacterial clones and then compared their sequences to 16S rRNA gene sequences in a public database to identify their closest bacterial relatives. This analysis demonstrated that the three most common types of bacteria associated with the corroded steel surfaces were from three bacterial phyla: β-Proteobacteria, α-Proteobacteria, and Cyanobacteria (Figure 2). Bacterial DNA from the β-Proteobacteria, a phylum that includes several iron-oxidizing bacteria, was mostly commonly found in the microbial biofilms. One 16S rRNA clone from the β-Proteobacteria group was most similar to *Rhodococcus ferrireducens*. This iron-reducing bacterium grows well at the near-freezing temperatures that are seasonally encountered in this harbor. The DNA sequences from other clones were most similar to *S. lithotrophicus*, the bacterium that was most similar to the iron-oxidizing bacteria we isolated from the corroding steel surfaces and cultured in the laboratory. To date, we have not isolated any clones from the β-Proteobacteria, a bacterial phylum dominated by sulfur- and sulfate-reducing bacteria.

Our data indicated that corroding steel structures in the Duluth-Superior harbor are covered by complex microbial biofilms containing bacteria of the type responsible for corrosion of steel in other environments. Although these data lead us to suspect that microbiologically influenced corrosion may be responsible for the accelerated corrosion seen in the Duluth-Superior harbor, they do not provide conclusive evidence that *S. lithotrophicus* or any other bacterium isolated or found in the clone library so far are responsible for this corrosion. All the data collected to this point, however, are consistent with the hypotheses that corrosion in the Duluth-Superior harbor is directly or indirectly accelerated by local differences in water quality or the action of microorganisms.

### Table 3. Percent Similarity of Bacterial Communities on Steel Structures at Corroded Sites in the Inner Part of the Duluth-Superior Harbor (MWE, HDS) and the Entry to the Harbor, an Area Less Affected by Corrosion

<table>
<thead>
<tr>
<th>Site</th>
<th>Duluth Entry</th>
<th>Midwest Energy</th>
<th>Hallett Dock 5 (Aug)</th>
<th>Hallett Dock 5 (Sept)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duluth Entry</td>
<td>71</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Midwest Energy</td>
<td>98</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Hallett Dock 5 (Aug)</td>
<td>86</td>
<td>44</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Hallett Dock 5 (Sept)</td>
<td>67</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Similarities are based on community DNA fingerprints (T-RFLP) developed from samples collected in 2006. Values along the diagonal represent the minimum similarity between replicate samples from the same site.

---

Figure 2. Proportions of Different Bacterial Phyla in Biofilm Samples Collected from Two Inner Harbor Sites in the Duluth-Superior Harbor

Note: Samples were collected in 2006 from Hallett Dock 5 (August 1, September 14) and Midwest Energy (August 15). Bacillariophyta are diatoms, a type of single-cell algae, rather than bacteria.

---

Related Findings and Future Directions
This section discusses additional findings and suggests directions for future research.

Geographic Extent of the Problem. This corrosion problem was initially identified in the Duluth-Superior harbor, and its worst effects seem to be confined to the inner part of the harbor. However, similar corrosion was later discovered at the Oliver Bridge where the St. Louis River empties into the harbor. Recent observations of steel corrosion in other ports by port authority and Sea Grant extension professionals have indicated moderate to severe corrosion in some of the busiest harbors in Lake Superior, including Two Harbors, Minnesota; Thunder Bay, Ontario; and Ontonagon and Houghton, Michigan. Steel structures with the most severe corrosion were often found in harbors with highly colored water typical of inputs from streams and rivers entering Lake Superior, whereas steel structures in harbors directly connected to Lake Superior such as the harbor at Silver Bay, Minnesota, usually showed little or less severe corrosion. Given all the existing data, the question of whether biological or chemical differences exist between Lake Superior and harbor waters that are directly or indirectly responsible for this type of corrosion remains.

Understanding the Cause of this Corrosion Problem and Beyond. Although our research reported here could not prove a microbial cause for this corrosion, it has led to new questions, additional research support, and unanticipated research directions. We are examining microbiological aspects of this corrosion in greater detail through additional sampling in the harbor, studying test coupons placed in the harbor, and evaluating the effects of several biological and water quality treatments in the laboratory with new funding from the Minnesota Sea Grant Program, the Great Lakes Maritime Research Institute, and the U.S. Army Corps of Engineers. Examining the data collected so far, we believe a risk assessment tool can be developed to predict the probability of similar corrosion occurring at other ports and to help assess the geographic extent of this type of corrosion in other parts of Lake Superior and the Great Lakes.

As part of another project funded by the Great Lakes Protection Fund, we are developing a method to quantify the abundance of iron-oxidizing bacteria and evaluating whether ballast water exchange from commercial ships may transfer bacteria, such as iron-oxidizing bacteria, that may be harmful to structures in other ports. Most recently, we are collaborating with other researchers to evaluate the biocatalytic capabilities of the iron-oxidizing bacterium that we isolated from the Duluth-Superior harbor with funding from the University of Minnesota Initiative for Renewable Energy and the Environment.

Public Policy Implications
Shipping through the Duluth-Superior harbor, the largest port by total cargo volume in the Great Lakes, contributes more than $200 million annually to Minnesota’s economy. Solving the accelerated corrosion problem has important implications for the economic vitality of the many companies whose 15 major cargo terminals ship ore, coal, and grain from this port. Currently, responses to this problem have been limited to repairing corroded areas, localized protection of corroded spots, application of protective coatings, or replacement of entire structures. Except for replacing structures, these practices are temporary solutions. For example, the best protective coatings may only prevent or reduce corrosion for 5 to 10 years in the Duluth-Superior harbor, where ice scouring is common. Corrosion similar to that seen on unprotected steel surfaces rapidly appears on coated sheet pilings after they are scratched or abraded. Thus, it is important to understand the mechanisms and agents responsible for this accelerated corrosion to find better solutions. Until then, companies and governments might consider revising the economic forecasts they use to decide when to repair or replace their docks, bulkheads, and piers because the useful lifetime of these steel structures in the Duluth-Superior harbor may be less than expected in freshwater.

The corrosion issue is attracting not only local attention but also regional, national, and international attention. Other ports and businesses in the Great Lakes started to report similar steel corrosion problems once accelerated corrosion was discovered, reported, and investigated in the Duluth-Superior harbor. As the frequency of these reports has increased, businesses and governments in other regions have become concerned that their structures and facilities may be experiencing similar accelerated corrosion or will likely face it in the future.

A more thorough understanding of this accelerated corrosion process in Minnesota will be invaluable to other port authorities in the Great Lakes, individual companies that own docks and slips, the U.S. Army Corps of Engineers, and engineering and construction firms hired to assess, repair, protect, or replace steel structures in ports. More funding from private, state, and federal sources would be useful, not only to verify the extent of the corrosion problem beyond the Duluth-Superior harbor and identify the cause, but also to test mitigation efforts like protective and antifouling coatings. If better ways to control or eliminate this problem cannot be found, then financial assistance to maritime businesses, port authorities, marina operators, and local governments may soon become necessary as more docks, piers, and channel markers require replacement or face failure. Ultimately, understanding the cause of this accelerated corrosion should be helpful in guiding and testing mitigation practices, which could lead to improved control and remediation efforts.

Randall E. Hicks is professor of biology at the University of Minnesota at Duluth (UMD) and director of the UMD Center for Freshwater Research and Policy. His research focuses on the ecology of aquatic microorganisms and their roles in nutrient cycling, biogeochemistry, and processes such as corrosion, and the survival, transport, and sources of potentially harmful microbes in aquatic ecosystems.

The author wishes to thank Jenna Bergin, Jensine Ohaju, and Jonathan Bostrom, who contributed to the research described here, as well as collaborators from the Duluth Seaway Port Authority, AMI Consulting Engineers, the Naval Research Laboratory at the Stennis Space Center in Mississippi, and the U.S. Army Corps of Engineers (Detroit District) for their cooperation.

The research upon which this article is based was supported in part by a grant from the CURA Faculty Interactive Research Program. The program was created to encourage University faculty to conduct research with community organizations and collaborators on issues of public policy importance for the State and community. These grants are available to regular faculty at the University of Minnesota and are awarded annually on a competitive basis. Additional support was provided by the Duluth Seaway Port Authority, the Great Lakes Maritime Research Institute, the Minnesota Sea Grant Program, and the U.S. Army Corps of Engineers.
Being singled out for special attention from the police because of your racial or ethnic identity, rather than your actions, seems profoundly inconsistent with the principle of equal treatment under the law. Yet some racial and ethnic groups, most notably African Americans, have protested what they perceive as manifestly unequal treatment from law enforcement agencies. One area of law enforcement that has drawn considerable attention is the enforcement of traffic laws, where there has been a long-standing perception among non-white drivers that they are far more likely than white drivers to be stopped and possibly searched. In other words, they believe they have been subject to racial profiling.

Because drivers from different racial or ethnic groups differ in other ways as well, convincingly demonstrating statistically the presence or absence of racial profiling has been difficult. The purpose of the present study is to apply a new approach to testing for racial profiling in traffic stops to the data for Minneapolis. We find compelling evidence of racial profiling during 2002, with many fewer qualifications than were necessary in previous studies. The new methodology was developed by Jeffrey Grogger and Greg Ridgeway and is described in detail later in this article. Grogger and Ridgeway applied the method to traffic stop data from Oakland, California, and found no evidence of profiling. Subsequently, researchers from the RAND corporation applied the methodology to data from Cincinnati, Ohio, again finding no evidence of racial profiling.

The issue of racial profiling has been prominent in Minnesota. In 2001 the Minnesota Legislature defined racial profiling as “any action initiated by law enforcement that relies upon the race, ethnicity, or national origin of an individual rather than the behavior of that individual” or information that leads police to suspect the individual of a crime (M.S. 626.8471). Two previous analyses of the Minnesota data conducted by the Council on Crime and Justice/Institute on Race


and Poverty\(^3\) and by University of Minnesota graduate student Nathan James,\(^4\) found evidence of racial profiling using the same data.

The new methodology used in our study circumvents a key statistical problem that undermines the results of these previous studies—namely that the characteristics of drivers of different racial and ethnic groups also differ on dimensions other than race and ethnicity. These other characteristics may in turn be related to drivers’ behavior, both their (legal) driving patterns and their propensity to commit traffic violations. Since few characteristics of the drivers are recorded in the data, other unobserved characteristics can confound the observed relationship between traffic stops and race. This is to say, if a particular racial group is being stopped at a higher rate than their proportion of the underlying population, it is very difficult to ascertain whether the reason for this is racial profiling or is rooted in driving behaviors that vary by race, such as driving older model cars with more mechanical problems that are likely to result in a traffic stop. This confounding problem is described in more detail below.

The research upon which this article is based was supported through a grant from CURA’s New Initiatives program.

\(^3\) Council on Crime and Justice/Institute on Race and Poverty. “Minnesota Statewide Racial Profiling Report: Minneapolis Police Department.” Report to the Minnesota Legislature, September 22, 2003. This study was mandated by the Minnesota Legislature.


What Would Motivate Racial Profiling?

People make judgments about each other all the time and for many purposes, and we usually do this on the basis of very incomplete information. Sometimes we use information that is not directly related to the matter we are judging. For example, an employer may take into account that a job applicant attended Harvard University even though having attended Harvard is not directly relevant to the job. Why? Perhaps because Harvard graduates are, on average, very capable employees. The employer is not able to observe the applicant’s ability directly, so instead bets on the average, using a signal that is, in itself, irrelevant. The signal need not be as obvious as a Harvard degree; indeed it may even be subconscious.\(^5\)

Economists refer to this kind of process as statistical discrimination. It is the process of using perceived characteristics of a population to make decisions about individuals. Racial profiling refers to the use of race or ethnicity in this way for law enforcement; race is used as a conscious or subconscious signal of an elevated probability that an individual has violated the law and deserves further scrutiny. Racial profiling in traffic stops could be used to “get a closer look” at certain drivers or their passengers—to glean more information about whether they are intoxicated or indications that a search might be justified and so forth.\(^6\)

A statistical consequence of racial profiling is disproportionate targeting of certain groups.

Although logically similar, racial profiling and hiring Harvard graduates differ in an important way: Society has decided that racial profiling is not a legitimate law enforcement technique. In fact, it violates explicit police department policy in Minneapolis and many other jurisdictions.

It is important to emphasize that racial profiling is not the same thing as racial prejudice, although, in principle, the two can interact. Pure racial profiling may be a logical response to a situation where actions must be taken on the basis of limited information. However, profiling may not be based on correct beliefs about the average


\(^6\) Our analysis examines only the frequency of the stops themselves. The decision to search is another possible locus of racial profiling, but we do not address it.
propensity to do things that are illegal, but rather on incorrect beliefs based on prejudice. In other words, prejudice can magnify the effect of racial profiling itself. There is no easy way to disentangle the effects of racial profiling, per se, from those of pure prejudice. We do not belabor the point, but strictly speaking our research looks for evidence of the shared symptom—a disproportionate incidence of traffic stops of a particular ethnic group—not racial profiling per se.

The Minneapolis Traffic Stop Data
In 2001 the Minnesota Legislature funded a statewide study of racial profiling, which was implemented on a voluntary basis by individual law enforcement agencies. Police officers from participating agencies reported data on each traffic stop during 2002. The Minneapolis data we use was collected as part of this statewide study. These are the data used in the CCJ/IRP study mentioned above.

The Minneapolis traffic stop data includes information collected in connection with 53,559 traffic stops that took place during 2002. Each observation includes the time and date of the stop, the race of the driver as perceived by the police officer, whether the race of the driver was observed by the officer prior to making the stop, the age and sex of the driver, the reason for the stop, and other information not used in the present study.

All of the data are based on reports by the police officer who conducted the stop. Officers were supposed to report on every stop, but given the scale of the data collection and the conflicting demands on officers and administrative personnel, it is likely that some stops are not recorded in the data.

The key data elements for our study are the race of the driver and the time and date of the stop. Errors in time and date would bias our findings toward finding no profiling, but it will be apparent when we describe our methodology that small errors would not have much effect on the results.

Since racial profiling is a response of a police officer to the race of a driver, what matters is the officer’s perception of race, not actual race; incorrect, but honest, identification of race is irrelevant. Deliberate misreporting of the driver’s race is a trickier issue, which we discuss below. We emphasize, however, that there is no evidence of deliberate misreporting.

The Statistical Problem
The Problem of Unobservable Factors. The simplest way to look at the Minneapolis traffic stop data also seems to many people to be conclusive evidence of racial profiling: 39.7% of drivers stopped were black, but only 15.8% of the driving-age population in 2000 was black; 44.7% of drivers stopped were white, but 69.8% of the driving-age population was white. It is not difficult to come up with a list of reasons why that conclusion is premature. These can be broken into two groups. The first group boils down to reasons why black drivers might commit more traffic offenses than suggested by their share of the driving-age population. For example, African Americans tend to have lower incomes and, therefore, tend to have less driver training and to drive cars that are more likely to have broken taillights or other equipment violations.

The second group of reasons has to do with patterns of driving and policing. For example, in 1998, the Minneapolis Police Department began a new crime-reduction strategy known as CODEFOR, which uses the geographic distribution of 911 calls and police crime reports to guide the allocation of police resources. As a result of this process, a number of census tracts were targeted for high-intensity law enforcement. The residents of most of these census tracts were disproportionately people of color. Because more police officers were patrolling these areas, there was bound to be a disproportionately large number of traffic stops and the drivers were disproportionately likely to be people of color relative to the population of Minneapolis. Because it is a more or less mechanical consequence of CODEFOR, this fact is not useful evidence about either the use of racial profiling or the propensity of residents in these areas to behave in ways that justify traffic stops.

The official report on the Minneapolis traffic stop data conducted by the Council on Crime and Justice and the Institute on Race and Poverty was unable to address many of these statistical challenges because the data are severely limited, particularly with respect to characteristics of the driver. Nathan James, in a masters thesis submitted to the Humphrey Institute of Public Affairs titled “Is Racial Profiling Occurring in the Twin Cities Metropolitan Area? An

Analysis of Traffic Stop Data from Nine Minneapolis-St. Paul Law Enforcement Agencies,” applied multivariate techniques that allowed him to control for several factors simultaneously, but he faced the same data limitations.

The position of the Minneapolis Police Department and many others around the country is that racial profiling violates department policy and that officers simply stop drivers when they see evidence of a violation. Furthermore, they argue, it is very difficult to observe the race of a driver before the stop happens. If there are different stop rates, the difference comes from different rates of violations or factors that are not recorded in the data.

The “Veil-of-Darkness” Methodology.
One approach that appears to avoid all of the statistical problems mentioned in the previous section comes from a simple observation: It is impossible to use racial profiling if you cannot observe the race of the driver. This suggests that useful information can be gleaned by comparing stop rates during the day with stop rates during the night. For example, it is true that stop rates for black drivers were disproportionately high in Minneapolis during 2002. If that were equally true at night, when officers are less likely to be able to identify a driver’s race, it would suggest the explanation cannot be racial profiling; if profiling were the cause, stop rates for black drivers should fall at night.

There are two problems with that empirical strategy. First, the conclusions are muddied by the fact that the ability to identify the race of a driver is not as closely tied to the day/night distinction as one might think; for Minnesota as a whole, officers indicated that they were able to identify the race of a driver only 19.4% of the time during daylight and 9.7% of the time during darkness. The accuracy of these reports has been questioned, but a little personal experimentation easily confirms the main message: It is often impossible to identify the race of a driver during the day (think about following a car on a stormy day) and sometimes possible during the night (under streetlights, for example).

The more important drawback, however, is that driving patterns differ between night and day, and might not vary in the same way for different racial and ethnic groups, but it is difficult to document these patterns. Also, different policing patterns during the night and day might mean different responses to these different driving patterns.

In their path-breaking paper, Grogger and Ridgeway proposed an approach that is largely immune to the standard criticisms of racial profiling studies. The core idea is a variation on the one discussed above, that darkness interferes with racial profiling (thus the “veil of darkness” name).

There are two components to the veil-of-darkness methodology. The first minimizes the problem of different driving patterns at different times of day. The second is a statistical test for the presence of racial profiling that relies on the idea that darkness would interfere with profiling, but that does not rely on being able to quantify how much it interferes.

The problem of different driving patterns during the day and at night is the result of comparing the treatment of motorists at different times of day. The veil-of-darkness methodology cleverly circumvents that problem by focusing on the evening *intertwilight period*—that is, the hours when, at the same clock time, it is light on some days of the year and dark on other days. In Minneapolis, the intertwilight period is roughly 5:05 PM to 9:03 PM. Rather than comparing the treatment of drivers during the day and at night, Grogger and Ridgeway suggest comparing what happens to drivers at specific times of day when it will be dark on some days of the year and light on other days of the year.

Figure 1 helps to illustrate this idea. It shows a scatterplot of the date and time of each traffic stop used in our analysis. The blue dots represent stops that took place during times of darkness, whereas the red dots represent stops that took place during daylight. Each stop (dot) meets two criteria. First, the stop did not occur between sunset and the end of civil twilight, a period that is difficult to classify as either “daylight” or “darkness.” In Figure 1, this period is the curving empty space. Second, the stop occurred at a time of day that would be in daylight at some times of the year and in darkness at other times (in other words, there are both red and blue dots on the horizontal line for that time of day in Figure 1).

Our analysis searches for evidence of profiling of black (or other nonwhite) drivers by comparing the probability that a driver stopped during darkness is black with the probability that a driver stopped during daylight is black, holding time of day constant. Because the method relies on this kind of comparison, deliberate misreporting of race would need to be consistently tilted toward daylight or darkness to bias the results.

An important feature of the veil-of-darkness methodology is that it is based on what social scientists call a *natural experiment*. In this case, the natural experiment is the intertwilight period during which we can observe traffic stops that occur in both daylight and darkness conditions at the same time of day throughout the year. In the language of experiments, darkness is the “treatment,” people driving during darkness are the “treatment group,” and people driving during daylight are the “control group.”

If one is convinced that the only important difference between the treatment and control groups is the treatment (darkness), then there is no need to control for other factors. For example, if nonwhite drivers actually commit more traffic offenses, that would account for a higher stop rate than experienced by white drivers. But the veil-of-darkness approach does not compare the stop rates of white and nonwhite drivers. Instead it looks for a change between light and darkness in the fraction of stops with nonwhite drivers. That comparison is statistically useful if the drivers at, say, 7:30 PM in August (daylight) have very similar characteristics to those at 7:30 PM in November (darkness). This seems very likely, but because the intertwilight period is not a controlled experiment, we address this issue directly later in this article.10

---

8 Civil twilight is the period of about 30 minutes after sunset when the sun is less than 6 degrees below the horizon.

9 Grogger and Ridgeway define the intertwilight period as the period between the earliest end of civil twilight and the latest. However, for our analysis, we exclude the period between 9:03 PM and the latest end of civil twilight (9:41 PM) because this period is never classified as daylight according to our first criterion.

10 In the language of experiments, what can go wrong with this story is the randomization of the treatment and control groups. Normally, when using either a controlled or natural experiment, one would evaluate the validity of the comparison by comparing the characteristics of the two groups. Here that is impossible because we have no information about the characteristics of drivers in general, only of drivers who were stopped. However, because the treatment (darkness) is seasonal, any problem along these lines must reflect some kind of seasonal variation in either the driving population or policing patterns.
Readers not interested in details of this methodology may wish to skip to the Results section. In technical terms, the veil-of-darkness method estimates a logistic regression that predicts the race of the driver (black vs. white, Latino vs. white, or nonwhite vs. white) using an indicator for darkness and a function of time of day. The presence of racial profiling implies that darkness would have a negative effect on the probability (i.e., a decreased likelihood) that the stopped driver is black (nonwhite). The variability in time of day accounts for the possibility that the mix of drivers on the road changes throughout the inter-twilight period.

We consider three functional forms for the time-of-day effects. The simplest is a linear time trend. The second specification, following Grogger and Ridgeway, is a six-knot natural cubic spline. This allows the regression a great deal of flexibility in fitting time-of-day effects, while insisting that these effects be “smooth.” The last specification instead adds dummy variables for each 15-minute interval during the inter-twilight period.

The second component of the methodology is a statistical test for the presence of racial profiling that exploits the difference between darkness and daylight as an imperfect proxy for whether the race of a driver is visible. Specifically, the null hypothesis of no racial profiling is equivalent to the null hypothesis that darkness has no effect in the regressions. Because observed effects combine the (unknown) effects of darkness on visibility and the effect, if any, of racial profiling, the test cannot quantify the practical magnitude of profiling. Another way to put it, in more technical terms, is that the test has low power against the null hypothesis of no profiling, and this is because the imperfect (and unknown) correlation between darkness and visibility reduces the ability of the test to detect deviations from the null hypothesis.

**Results**

The top row of Table 1 reports our core results when the sample is restricted to white and black drivers. All of the results refer to the evening inter-twilight period. (There were few stops during the morning inter-twilight period.) The entries measure how the rate at which black drivers were stopped changes between daylight and darkness. The entry in the first column has the most direct interpretation: the fraction of drivers stopped during darkness who are black was 5.5 percentage points lower than the fraction stopped during daylight. That difference is highly statistically significant, and provides compelling evidence of racial profiling.

Since police officers cannot always identify race during the day and sometimes can identify race during hours of darkness, the 5.5 percentage point figure does not quantify the extent of racial profiling (which we would define as the extent to which black or nonwhite drivers are treated differently when their race is known). The estimate in column 1 does, however, offer a new perspective on the disproportionate rate at which black drivers were stopped because this comparison arguably holds approximately constant everything except the presence of sunlight. During daylight in the inter-twilight period, 51.4% of drivers who were stopped were black. But during darkness, when profiling is more difficult, the fraction of stopped drivers who were black shrank to 45.9.

The second through fourth columns of the table use more flexible specifications that allow for time of day effects. The table reports the effect of darkness evaluated at 7:00 PM; the predicted effect varies little during the inter-twilight period. These more flexible specifications strengthen the conclusion implied by column 1. The effect of darkness, about 7 percentage points, is somewhat larger and the effect of darkness is statistically significant (i.e., the null hypothesis of no racial profiling is rejected) in every case.

The second row of Table 1 summarizes the results when the regressions compare Latino drivers with white drivers. The estimated impact of darkness is somewhat smaller for Latino drivers, but again the hypothesis of no profiling is rejected in all specifications. The third row compares all nonwhite drivers with white drivers. The results are very similar to the first row because most nonwhite drivers were black.

*Sensitive Analyses.* We considered several variations on the empirical strategy described above. First, we allowed the effect of darkness to vary during the inter-twilight period by adding interactions between the darkness indicator and the time-of-day functions. Intuitively, the interaction terms allow the effect of darkness to vary among horizontal strips in Figure 1. The darkness-time interactions were not statistically significant in most specifications, and the overall effect of darkness remained statistically significant in every case (i.e., the hypothesis of no profiling was rejected).

Second, we restricted the sample to the period between 6:00 and 8:00 PM on the grounds that there were relatively few stops in darkness before 6:00 PM.
and relatively few stops in daylight after 8:00 PM. The effect of darkness was still highly significant in this specification.

Third, it could be argued that certain types of equipment violations would be less visible after dark (others, such as burned-out headlights, would be more identifiable). If equipment violations are correlated with race (via income, for example), the proportion of stopped drivers who are nonwhite would drop after dark—the same empirical implication as racial profiling. The same argument could apply to registration violations. Therefore, we restricted the sample to stops triggered by driving violations. Again, the results changed very little.

Seasonality in driving patterns could mean that the racial mix of drivers on the road at any given time of day is correlated with darkness, which would reintroduce the confounding problem the veil-of-darkness methodology is intended to circumvent. We addressed the seasonality issue in two ways. First, we added 12 time-of-year dummy variables (approximately corresponding to calendar months) to the specifications that included time-of-day effects. The time-of-year coefficients were not statistically significant, and the effect of darkness remained highly significant. This suggests that seasonal effects do not account for our results.

The second way we looked for seasonal effects was to take advantage of the switches to and from daylight saving time. On days near these switches there is somewhat more than one hour of clock time that switches from daylight to darkness or vice versa over the course of only few days. Our final sensitivity check involved restricting the sample to stops near these switches. Stops must have occurred within 10 days of the switch to or from daylight saving time and at a time of day that switches from daylight to darkness or vice versa within that 20-day window. The resulting subsample (Figure 2) contains 341 stops.

Using observations near the switches to and from daylight saving time holds time of year nearly constant while still being able to compare stops during daylight and darkness. The logistic regressions for this analysis include only indicators of darkness and whether the stop was near the fall switch. Using this highly restricted sample, the estimated effect of the darkness indicator is negative and statistically significant at the 5% level in the regressions comparing black and white drivers (283 stops) and comparing nonwhite and white drivers (341 stops). In the comparison of Latino and white drivers (203 stops), the coefficient is negative, but not statistically significant. Overall, this suggests that the strong rejection of the hypothesis of no profiling using the full sample is not due to unobserved seasonal variation in driving or policing patterns.

**Limitations.** The validity of estimates from the veil-of-darkness methodology depends on the implicit assumption that driving and policing patterns during the intertwilight period do not vary much with the time of year. There is no easy way to verify the assumption directly, but we found no evidence of time-of-year effects in our analysis.

A second caveat about our results is that it is impossible to distinguish “vehicle profiling” from racial profiling with the available data. Vehicle profiling would take place if police officers used the characteristics of vehicles (rather than drivers) as signals of an elevated probability of a violation of the law. If vehicle characteristics are also associated with race, vehicle profiling could result in the same disproportionate treatment of some racial or ethnic groups as racial profiling. One plausible reason for an association of vehicle characteristics with race is that the relatively low average income of nonwhite minority groups would lead them on average to drive older, less expensive cars than white drivers. If the relevant characteristics of vehicles are less visible during darkness, vehicle profiling would be detected by the veil-of-darkness methodology.

Although vehicle profiling certainly would not be met with the same level of opprobrium as racial profiling, it seems unlikely that most Americans would approve of the practice.

**Conclusions**

Our study used a new approach to detecting racial profiling in 2002 traffic stop data for Minneapolis. This method, developed by Grogger and Ridgeway, compares the stop rates for nonwhite drivers during daylight and darkness using only stops that occur at times of day when it is light at some times of the year and dark at other times. The new approach avoids statistical problems that have plagued the study of racial

![Figure 2. Traffic Stops Near Switches to or from Daylight Saving Time](image-url)

Note: Red dots represent traffic stops used in this analysis that occurred during daylight, and blue dots represent stops that occurred during darkness.
profiling. Our results point strongly to the presence of racial profiling in Minneapolis.

Finally, we note the traffic stop data were collected during 2002 because of contemporary concern about racial profiling in Minnesota. Subsequently, the Minneapolis Police Department took various steps to try to ensure that racial profiling does not take place. Some of these steps were outlined in a federal mediation agreement adopted in December 2003. The Minneapolis Police Department also invited the Council on Crime and Justice to investigate possible institutional reasons contributing to the disparity in stop rates. More recent data would be required to evaluate the success or failure of these efforts.

Joseph A. Ritter is associate professor in the Department of Applied Economics at the University of Minnesota. His recent research focuses on the role of race in U.S. labor markets. David Bael is a doctoral candidate in the Department of Applied Economics at the University of Minnesota, and a graduate student fellow at the University of Minnesota Institute on the Environment. His current research focuses on conservation planning to preserve biodiversity and ecosystem services.

The research upon which this article is based was supported through a grant from CURA’s New Initiatives program. These grants support projects that are initiated by faculty, community organizations, government agencies, or students and that fall outside CURA’s existing program areas.

11 The agreement is available at www.ci.minneapolis.mn.us/police/about/mcu/federal-mediation-agreement.pdf.


New CURA Reporter Publication Schedule

The CURA Reporter has been in continuous publication since 1970 as a quarterly report of research projects undertaken by the Center for Urban and Regional Affairs. Due to budget and staff constraints, the CURA Reporter will be published semi-annually as a double issue for the foreseeable future, beginning with this spring/summer 2009 issue.

Switching to a twice-yearly publication schedule will help CURA save money on printing and postage while still providing regular updates on our latest publications, projects in progress, and new programs and initiatives.

Look for other changes to the CURA Reporter during the next year, including several design changes, a reader survey, and an option to receive the Reporter electronically. As always, readers can access the CURA Reporter online at www.cura.umn.edu/Reporter.php.
2009–2010 Faculty Research Awards

The Center for Urban and Regional Affairs is pleased to announce the recipients of CURA’s 2009–2010 Faculty Interactive Research Program (FIRP) awards. This program was created to encourage University faculty to carry out research projects that involve significant issues of public policy for the state and that include interaction with community groups, agencies, or organizations in Minnesota. Grants are available to regular faculty members at the University of Minnesota and are awarded annually on a competitive basis.

The Unraveling of the American Dream: Foreclosures and Communities of Color in Minneapolis. Almost all of the research related to foreclosures fails to consider the role of household characteristics—a surprising omission because the effects of foreclosures are probably felt most acutely at the household level. Ryan Allen (Humphrey Institute) will examine the relationship between household characteristics and foreclosures. Working with Minneapolis Public Schools, Allen will create a unique dataset that includes neighborhood, household, property, and loan characteristics for a sample of foreclosed and non-foreclosed properties in Minneapolis. Using this dataset, Allen will estimate random effect models that indicate the relationship between household characteristics and foreclosures, while holding neighborhood, property, and loan characteristics constant. In conjunction with the Minnesota Home Ownership Center, Allen will interview heads of households that have experienced foreclosure to determine the causes of foreclosures and what effect the foreclosures have had on the financial opportunities and social capital of the household. Expected outcomes include reports for agencies that work to prevent foreclosures.

Recycling Tear-Off Asphalt Roofing Shingles in Asphalt Pavements. Almost 20% of construction and demolition waste in the Twin Cities metropolitan area is tear-off roofing material, and 90% of this material is potentially recyclable. Currently, 100% of this material is sent to landfills. In 1996, the Minnesota Department of Transportation (MnDOT) adopted a specification allowing up to 5% manufacturers’ roofing shingle scrap in asphalt pavements. However, the use of tear-off shingles generated from reroofing existing residential buildings is prohibited. Unlike scrap from new shingles, the asphalt in old roofing shingles is highly oxidized, so it is very brittle and cracks easily at low temperatures. Mihai Marasteanu (Civil Engineering) will determine the optimum balance between new asphalt material and recycled tear-off shingles that provides minimum reduction in cracking resistance of asphalt pavements. The research team will work closely with MnDOT Office of Materials and with the Solid Waste Management Coordinating Board (comprised of commissioners from all metro area counties plus representatives from the Minnesota Pollution Control Agency) to develop a draft specification for allowing recycled tear-off shingles in asphalt pavements.

Hospital Costs of SUVs and Light and Heavy Trucks to Themselves and Others. During the last two decades, the proportion of SUVs and trucks on U.S. roads increased from 22% in 1980 to 39% in 2000. Pinar Karaca-Mandic (School of Public Health) will use confidential micro crash data linked to hospital records to assess the hospital costs of trucks and SUVs in the Twin Cities area. The study will assess both internal costs (costs from injuries these vehicles cause to their own passengers) and external costs (costs from injuries sustained by the passengers of other vehicles, as well as pedestrians, bicyclists, and motorcyclists). Findings from this research have the potential to guide policy in setting optimal registration fees and sales taxes on SUVs and trucks. In addition, findings may have implications for imposing different licensing requirements for these vehicles. The research team will collaborate with the Minnesota Department of Health’s Injury and Violence Prevention Unit, whose mission is to strengthen Minnesota’s communities in injury and violence prevention.

Manpower Planning for Transit Operations. The single largest line item in metropolitan transit budgets is labor cost. Transit authorities face high labor costs, constrained work rules, and variable workforce availability due to planned and unplanned absences, as well as day-to-day variation in work required. Common practice to cope with this variability is to have a certain fraction of the workforce serve as extraboard operators who are not assigned particular duties in advance, but are assigned to open work as it becomes available. Diwakar Gupta (Mechanical Engineering) and Nigel Wilson (Civil Engineering at MIT) will partner with Twin Cities Metro Transit management to develop implementable approaches for improving extraboard sizing decisions. The project goals are consistent with policies of the Metropolitan Council that require transit providers to promote innovation, efficiency, flexibility, and greater diversity of options in operating and managing transit services.

Arsenic Vulnerability Maps for Domestic Wells in West-Central Minnesota. In Minnesota, the frequency of arsenic contamination in domestic wells poses a serious and widespread public health threat. The Minnesota well code now requires testing of new wells for arsenic. Although testing provides families with essential information, it comes only after the well has been drilled. The best practice is to place new wells where the probability of clean water is highest. Brandy M. Toner (Soil, Water, and Climate) will integrate new and existing databases to generate science-based policy evaluations for placement and construction of new domestic wells. The project will include consultation with the Minnesota Pollution Control Agency, Minnesota Department of Health, Minnesota Geological Survey, U.S. Geological Survey, and Minnesota Department of Natural Resources to identify knowledge gaps and research opportunities. The major outcome of the research will be a new statewide map of the vulnerability of new wells to arsenic contamination.
Housing foreclosures represent one of the most serious problems facing neighborhoods. According to research conducted by the New York Times,¹ more than four million mortgage loans worth $717 billion were in foreclosure as of February 2009. According to HousingLink, the Twin Cities metropolitan area had 17,268 foreclosures in 2008.² The number of foreclosures is expected to continue to rise as unemployment renders some homeowners with standard mortgages unable to keep up with mortgage payments. Impacts from foreclosure will not be remedied by government funding or intervention alone.

As a result of the foreclosure crisis, urban neighborhoods that have succeeded in increasing homeownership, renter stability, and revitalization are now destabilized and face an uncertain future. Neighborhoods suffer many negative impacts from foreclosures, including:

- lengthy vacancies that result in visible signs of neglect, reducing the values of surrounding properties;
- an increased supply of housing on the market, lowering the value of similar properties;
- eviction of tenants who occupy multiunit properties when the property is foreclosed;
- vacant and abandoned properties that attract criminals, reduce neighborhood quality of life, and increase local government expenses for inspections, demolition, and fire and police services; and
- forced relocation of families who lose their homes, causing employment disruption, reduced school attendance, and loss of social networks.

Because the causes and nature of foreclosure are different across and within cities, responses must be tailored to neighborhood conditions. To explore what neighborhood responses are being deployed in the face of the foreclosure crisis, CURA and the National Neighborhood Indicators Partnership (NNIP) organized a symposium in May 2009.

² Online at www.housinglink.org/Foreclosure.htm.
5. overextended investors—property owners driven by real estate speculation or entrepreneurs targeting housing in declining markets

Because of these diverse causes of foreclosure, she emphasized that strategies need to be customized to fit the buyer's situation.

Panelist Alan Mallach, nonresident senior fellow in the Metropolitan Policy Program at the Brookings Institute, noted that foreclosures are a constantly changing moving target, making it difficult to understand the implications for neighborhood stabilization. According to Mallach, by the end of 2008, 1 of every 30 mortgages in the United States was in foreclosure, subprime mortgages were declining and prime and near-prime mortgages were increasing, housing sales were dropping sharply, and median housing sales prices were declining. However, these patterns are not consistent across the country or even within cities. In Minneapolis, the foreclosure disparities are extreme, Mallach noted. The Northside community has been one of the hardest hit by foreclosures and sales prices have fallen sharply, but the number of sales has been growing during the last two years. St. Paul has experienced similar patterns, with some neighborhoods experiencing 60–75% declines in sales values, while others have had less than a 25% decline.

Although neighborhood response strategies can be challenging in this dynamic environment, Mallach argued, it is evident that all neighborhood stabilization activities take place in a larger market context; that local neighborhood market dynamics must be considered, particularly the destabilizing and stabilizing factors; and that response strategies and expectations need to align with the neighborhood's market realities. Mallach argued that effective response strategies should focus on both building stability and reducing destabilizing factors in neighborhoods. These factors can best be determined by the specific market conditions for the neighborhood. Market conditions fall along a continuum, from market correction to market collapse:

- market correction—demand increases as prices fall to affordable levels and supply/demand equilibrium is restored
- market destabilization—demand potentially exists, but may need public or nonprofit intervention to trigger effective demand

Only through an understanding of the market dynamics and trajectories in a neighborhood can effective strategies be initiated.

Mallach stressed that neighborhood stabilization must be part of a larger strategy, not just about transactions such as acquiring a foreclosed property, which are only a means to an end. He cited California as an example. Real estate–owned (REOs) or foreclosed properties that have been taken back by a lender and put up for sale have increased dramatically during the last two years, and have all but driven out traditional sales from the market. REOs are now pricing the market, and will likely continue to do so because more REOs are going on the market than are being sold. Mallach noted that “buying and rehabbing properties in this kind of market is like trying to fix your roof in the middle of a hurricane.” A better approach is to develop market-sensitive strategies guided by the local neighborhood market. As shown in Table 1, acquisition and rehabilitation are applicable to all market conditions, but should be applied in different ways. With respect to reuse (Table 2) and other strategies (Table 3), certain approaches make more sense under certain market conditions.

Mallach also discussed other activities that can be used to mitigate the impact of foreclosures and/or promote stabilization and market demand, including:

- instituting crime prevention techniques
- strengthening neighborhood quality of life
- building a stronger neighborhood social fabric
- keeping properties occupied
- preventing evictions
- encouraging loan servicers to allow owners to remain as tenants
- keeping properties maintained
- enforcing codes by imposing responsibility on lenders/servicers
- using nuisance abatement authority

These activities require some difficult choices for neighborhoods. However, the reality is that creating new homeownership for foreclosed properties may

Panel: Thinking Strategically about Foreclosure Responses

Panelist Phyllis Betts, Director of the Center for Community Building and Neighborhood Action at the University of Memphis, emphasized the need for data and analysis to understand the causes of foreclosures. To develop effective neighborhood interventions and strategies, she noted, it is important both to understand the scope of the foreclosure problem and to segment the problem to identify context-specific and neighborhood-specific interventions. To illustrate the importance of assessing the local causes and context, she explained that in Memphis, subprime lending for owner-occupied houses was not concentrated in the inner city, but rather in suburbs and in higher-than-median-income neighborhoods. In addition, high foreclosure densities in Memphis have resulted largely from investor-owned properties.

Betts offered a typology of five types of buyers who experience foreclosure:

1. marginal buyers—borrowers for whom successful homeownership is questionable at the time of purchase
2. buyers pushing the affordability envelope—homeowners who may have been successful had they negotiated a less expensive home purchase
3. debt-driven equity borrowing—longer term homeowners who used home equity to deal with non-mortgage debt through home equity loans or cash-out refinancing
4. sudden jeopardy—longer term homeowners or new homeowners with erstwhile secure employment histories and little reason to anticipate a change in their status who experienced unanticipated financial insecurity due to job loss or other hardship

More than 100 NNIP members, city staff, community developers, and neighborhood organizers from 30 cities across the nation assembled to share their experiences addressing the problem of foreclosures on a neighborhood level. The symposium featured panel discussions on thinking strategically about responding to foreclosures and foreclosure solution strategies, as well as afternoon workshops on specific strategies for dealing with the foreclosure problem on the ground. This article summarizes the presentations and discussion from the symposium.
not be possible in all neighborhoods, particularly where investors are moving into neighborhoods with high volumes of REOs and turning them into rental properties. Mallach noted that public regulation can have a dramatic impact by reducing the link between foreclosure, disinvestment, vacancy, and abandonment; by creating incentives to keep owners and tenants in their homes; and by imposing on the banks that own them responsibility for maintaining properties.

Presentations: Foreclosure Solution Strategies

Three presenters described the activities their organizations use to respond to foreclosures. **Prevention.** Julie Gugin is executive director of the Minnesota Homeownership Center (HOC), a statewide intermediary that supports 50 agencies around the state organized to promote and advance successful homeownership for low- and moderate income households. Of the agencies in the HOC network, 25 provide foreclosure counseling services. Most of the counseling is provided over the phone, but one-on-one counseling is also available. The objective of the foreclosure prevention program is to avoid foreclosure, not necessarily to keep the owner in their home, because that is not possible in many situations. The emphasis is on early intervention—helping homeowners understand their situation before it is too late to avoid foreclosure—and services may include negotiating with lenders on behalf of consumers. The HOC network served approximately 12,000 customers in 2008, and roughly 50% of these clients were facing foreclosure as a result of job loss. Gugin identified several lessons learned from HOC’s foreclosure prevention program:

1. Early intervention is critical.
2. Partner with state and local governments to distribute marketing materials (e.g., through utility bills) and raise awareness of available services.
3. Broader outreach to the front lines, including the faith community and employers, to provide trainings and distribute promotional materials.
4. Counseling works. Foreclosure has been averted in 56% of closed cases, at an estimated savings to communities and neighborhoods of $300 million.

Mitigating Community Impacts.

Edward Cunningham is manager of the Property Maintenance Code Enforcement Division in Cincinnati, Ohio. Cunningham argued that mortgagees need a statutory standard of behavior for protecting neighborhoods from the ravages of foreclosure. Such a standard might include the following:

- Prevent foreclosures. Lenders lose an average of $30,000 on each foreclosure filing.
- Keep the property occupied until a responsible owner takes over.
- Require mortgagees to assume the responsibility of a traditional owner upon judgment of foreclosure.
- Require code violations to be corrected prior to final confirmation of sale.
- Require mortgagees to appoint a receiver for multifamily buildings upon initial filing of foreclosure.

Cunningham noted that inspections and code enforcement can be tools to make owners of foreclosed properties correct violations and stem cycles of decline. Lender responses to notices of violation vary dramatically. Local owners with local lenders tend to be more responsive than properties owned by national lenders who have securitized the mortgage, making it difficult to identify the responsible party to remedy the code problems. The complexity of locating a responsible party complicates the ability of inspections to respond effectively to the growing number of foreclosed properties and resulting neglect and abandonment. Strategies Cincinnati uses include:

<table>
<thead>
<tr>
<th>Table 1. Market-Sensitive Strategies to Foreclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategy</strong></td>
</tr>
<tr>
<td>Acquisition</td>
</tr>
<tr>
<td>Rehabilitation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2. Primary and Secondary Reuse Strategies to Foreclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategy</strong></td>
</tr>
<tr>
<td>Market sale</td>
</tr>
<tr>
<td>Subsidized sale or lease-purchase</td>
</tr>
<tr>
<td>Subsidized rental</td>
</tr>
<tr>
<td>Land banking</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 3. Other Strategies to Foreclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategy</strong></td>
</tr>
<tr>
<td>Foreclosure prevention</td>
</tr>
<tr>
<td>Code enforcement</td>
</tr>
<tr>
<td>Homebuyer assistance</td>
</tr>
<tr>
<td>Market-building incentives</td>
</tr>
<tr>
<td>Selective demolition</td>
</tr>
<tr>
<td>Infill development</td>
</tr>
</tbody>
</table>
- filing one civil suit alleging nuisances for many buildings owned or controlled by a mortgagee;
- increasing directed police patrols and allowing police to arrest under vacant building orders
- enforcing regulations on scrap metal dealers
- requiring monthly inspections by mortgagee and requiring that lenders protect collateral
- keeping buildings occupied through foreclosure and sale by leasing to the mortgage holder
- requiring lenders to post bonds at foreclosure to cover municipal costs
- instituting a moratorium on foreclosures

Cunningham concluded by noting that enforcement cannot effectively respond to the foreclosure crisis without new laws to ensure mortgagees filing foreclosures take action to mitigate damage to neighborhoods, and without efforts to assure that foreclosure and sale of properties does not perpetuate the cycle of disinvestment and blight.

**Property Recovery.** Donovan Walsh and Dawn Stockmo described the work of the National Community Stabilization Trust (NCST), founded in 2008 to help communities work with lenders and mortgage services to create single-point access to REO properties and promote neighborhood stability. NCST works with more than 100 communities across the country, and the Twin Cities was one of the first pilot localities for the program. Many big-name financial institutions have signed up to participate, and NCST is now reaching out to regional and specialty lenders.

Walsh and Stockmo identified five key characteristics that guide the work of NCST:

- collaboration—bringing players together
- concentration—understanding where foreclosures are concentrated to target resources
- capacity—having sufficient “boots on the ground” to inspect properties and assess whether to rehabilitate or demolish
- capital—acquiring sufficient resources through federal funding programs such as the Neighborhood Stabilization Program, Community Development Block Grants, and HOME Investment Partnerships Program
- comprehensive—pursuing a range of strategies, such as homebuyer education, prevention, etc.

NCST has two property acquisition programs that are based on the principles of scalability, transparency, and practicality. First Look provides states and communities with exclusive access to foreclosed properties before they are listed in the open real estate market. The seller agrees to an adjusted sales price that subtracts holding and maintenance costs that would otherwise be incurred. The program requires a five-day turnaround with regard to whether the potential purchaser—typically an NCST nonprofit or public agency participant—is interested in purchasing the property. The Targeted Bulk Purchase program gives an NCST nonprofit or public agency participant the opportunity to purchase a portfolio of distressed properties in bulk—sometimes up to one or two dozen properties in a single transaction. These properties often include aged inventory from the sellers, and are offered at pricing similar to the First Look program. To date, 900 properties have been shown across the country, and NCST participants have purchased about 100 of the properties shown. The number of properties is expected to grow exponentially. Of properties in the community target areas, 30–40% are expected to be purchased for rehabilitation or land banking.

**Presentation: Foreclosure Prevention and Neighborhood Stabilization Website**

Over the lunch hour, Rebecca Cohen from the Center for Housing Policy presented a new website, foreclosure-response.org. The site is an online guide to foreclosure prevention and neighborhood stabilization strategies, developed and maintained by the Center for Housing Policy, KnowledgePlex, the Local Initiatives Support Corporation (LISC), and the Urban Institute. Launched in 2009, the site includes easily accessible information on a broad range of state and local policy solutions, as well as tools to create customized neighborhood-level data reports and maps and participate in interactive online discussions.

**Workshop: Outreach and Organizing for Prevention**

Jeff Skrenes, the housing director for the Hawthorne Neighborhood Council in Minneapolis, and Peggy Sand, the coordinator of the Baltimore Homeownership Preservation Coalition, discussed the strategies and data they use to target their foreclosure prevention efforts. The Hawthorne Neighborhood Council, in partnership with Jewish Community Action, compiled a list of every mortgage in north Minneapolis originated in 2007, organized by neighborhood. Volunteers then went to the county to get mortgage records, identifying which loans had adjustable rate mortgages.
(ARMs) and when they were going to reset. Using this information, volunteers went door-to-door, providing home-owners with foreclosure prevention information based on the reset timing. Some residents did not even know that they had an ARM. In addition, the council identified and contacted a few homeowners who may have been given loans with illegal terms.

The Baltimore Homeownership Preservation Coalition is a coalition of 60 organizations, including bankers, nonprofit housing developers, advocacy groups, government agencies, and realtors. The coalition has data on foreclosure notices, and is trying to collect data on intent to foreclose. These data are especially useful because the foreclosure process in Maryland has been lengthened, giving the coalition time to target their outreach. In addition, they created a marketing campaign using bus ads, billboards, and radio and enlisted public officials to help spread the word about the coalition’s efforts.

Several other strategies were mentioned in the workshop, including addressing letters to residents by hand, because residents are less likely to throw away such a letter; reaching out to landlords in danger of foreclosure, because many counseling programs will not help landlords, only owner-occupants; and changing tenant laws so that foreclosure is not grounds for eviction of renters.

**Workshop: Managing Foreclosed Properties**

Michael Schramm, from the Center on Urban Poverty and Community Development at Case Western University in Cleveland, and John Kromer, from the Fels Institute of Government at the University of Pennsylvania, led a workshop on the importance of managing foreclosed properties. Schramm reported that in Cleveland, the density of foreclosures increased significantly from 2006 to 2008, with some neighborhoods experiencing 20–30% foreclosed properties. During this period, foreclosures also expanded in suburban Cuyahoga County. With the growing number of distressed properties on the market, house sales prices dropped from 80% of estimated market value in 2000 to 30% in 2008. In Cleveland, 65% of REOs are being sold for $10,000 or less. Investors in REO properties have simply compounded the problems created by foreclosures.

Schramm has been working with the City of Cleveland to integrate his organization’s database, called NEO CANDO, with code enforcement data so that properties can be tracked more effectively. Through this database, properties that enter and exit REO can be brought to the attention of city code enforcement staff for inspection. A customized interface is being developed within the NEO CANDO database so community development corporations (CDCs) can track foreclosed properties that are changing ownership in their service areas. CDCs also can enter new code enforcement complaints to route to the city’s Housing Department for inspection or demolition.

Data on bank practices for selling off distressed properties to investors has been used in a recent lawsuit brought by the Cleveland Housing Renewal Project, a subsidiary of Neighborhood Progress Inc., that seeks to have foreclosed properties owned by Wells Fargo and Deutsche Bank declared public nuisances that must be fixed or demolished. A Cleveland housing judge ruled in July 2009 that Wells Fargo Bank must put up $1 million if it wants to begin selling deeply discounted homes it owns in Cleveland. The ruling also holds that in addition to posting the million-dollar bond—essentially the cost to demolish 100 homes—Wells Fargo must supply a complete list of all homes it owns in Cleveland and make sure any homes that are vacant are boarded up or otherwise secured.

John Kromer from the Fels Institute of Government talked about public sector strategies for responding to foreclosures and how they are informed by data. His remarks focused on code enforcement in Allentown, Pennsylvania, a city which has been a target for absentee investors because its properties were undervalued in relation to its proximity to New York City. Speculators often converted single-family homes to multifamily apartments, and overcrowding became a serious problem. To address this overcrowding, voters approved a referendum initiated by the mayor to require licensing and annual inspections for all rental properties.

Allentown also has instituted a policy of citywide inspections of all properties every five years. The city works with owners of noncompliant properties to resolve issues, but when conditions of noncompliance persist, the city can issue a notice that the property is “unfit for human habitation.” For the worst properties, the city can issue a certification of blight, which provides the redevelopment agency with the authority to take the property for redevelopment. These practices have put owners on notice that the city is serious about compliance, and despite some
initial resistance, overall compliance has been steadily increasing.

At the state level, the Pennsylvania legislature passed point-of-sale inspection legislation, which requires an inspection at the time of sale for both owner-occupied and rental properties. This practice helps identify the responsible owner, and alerts potential buyers to code violation issues.

Finally, Kromer cited several examples of successful vacancy prevention efforts. In Philadelphia, a foreclosure diversion program mandates that any property eligible for foreclosure be subject to a conference that includes the borrower, the lender, and a judge in order to attempt to reach an agreement that prevents the foreclosure.

In neighboring New Jersey, legislation encourages lenders and borrowers to enter into own-to-rent agreements that enable a person in a property that is subject to foreclosure to stay in the home as a renter and then eventually own or regain equity in the property. These programs keep foreclosed properties from becoming vacant or prey to unscrupulous investors.

**Workshop: Acquisition of Foreclosed Properties**

Jim Erchul, executive director of Dayton's Bluff Neighborhood Housing Services in St. Paul, and Carolyn Olson, president of the Greater Minnesota Housing Corporation in the Twin Cities, spoke about their experiences acquiring foreclosed properties in Minneapolis and St. Paul. Both organizations have operated in this arena for more than 20 years. Recently they have been involved with the National Community Stabilization Trust and its First Look program. Both organizations generally rehabilitate and resell the properties they buy, and focus their efforts on properties they know they will be able to resell quickly—an easier task in the Twin Cities region, where there has been high demand for rehabbed houses that come back online. However, both Erchul and Olson acknowledged that rehabilitation was not appropriate for all neighborhoods and that, in some cases, it might be necessary to buy and hold, or possibly demolish, the properties until the housing market has stabilized.

Junious Williams, chief executive officer of the Urban Strategies Council in Oakland, California, spoke about his organization's development of the Oakland Community Land Trust, in partnership with the Association of Community Organizations for Reform Now (ACORN). The purpose of the land trust is to buy up REO properties, pay off the lien holder, rehabilitate the property, and then sell the home to a family earning 50–80% of area median income. When the home is resold, the original owner keeps all of their investment and a share of the equity appreciation, which allows the Oakland Community Land Trust to maintain affordability for the next family. The trust plans to acquire 200 REO properties.

During the workshop session, participants discussed challenges to acquiring properties, including the sheer volume and cost of the foreclosed properties involved, and the difficulty of acquiring enough properties in a community to impact the neighborhood positively. Other discussion considered what types of investors are buying up foreclosed properties, how to distinguish "good" investors from "bad" investors, and the need for at least some private investors to be involved given the limited fiscal capacity of nonprofits. Some participants voiced concerns about lack of strategic planning on the future of neighborhoods and inner cities, particularly given that many acquisition strategies involve buying up whatever property is affordable. Finally, participants debated whether the lending industry should face penalties and consequences for past actions, stricter regulations related to REO going forward, or both.

**Workshop: Land Banks**

Donna Hunter, administrator of the City of Columbus (Ohio) Land Development Office, and Duane Ingram, land bank manager for the Indianapolis Department of Metropolitan Development, shared their experiences running land banks in their cities. Both participants agreed that land banks should choose which strategies to pursue based on local area conditions. Ingram suggested that coordinating with local CDCs is an important element in developing a local land bank plan. Because CDCs often have a detailed knowledge of their neighborhoods, they can direct the land bank to acquire key properties. In addition, they are typically staffed by residents who understand community goals and concerns, and can help mold a community consensus about the land bank plans. In Indianapolis, CDCs work with the community and consultants to provide the land bank with a plan for which properties to purchase. Quite often, the land bank follows the CDCs' plans.

Another innovative strategy the Indianapolis land bank authority uses is to train residents in neighborhood organizations to assess and deal with vacant and abandoned properties. This helps the land bank authority get properties onto their radar, and allows them to certify to the county that the properties are vacant.

Another strategy discussed was purchasing occupied properties. The Columbus land bank purchases some occupied commercial rental properties for future redevelopment, and keeps a property manager on staff. Although there are difficulties with the city acting as a landlord—for example, occupants may need to be evicted, which is politically difficult—there are benefits as well. Occupied properties are more often kept up by their occupants, and buying occupied properties expands the pool of properties that can be bought.

Alan Mallach of the Brookings Institute recommended changing state laws to make the process to establish land banks easier. Currently, in many states, the tax-foreclosure sale process is designed to recoup back taxes rather than stabilize the communities in which the properties are located—often because the county is responsible for the tax sale, whereas the city is responsible for redevelopment. Even if the city and county have a good working relationship, if this process is not institutionalized, the relationship can break down when personnel change. To recover back taxes, counties may offer properties for sale to the public once or even twice before allowing a public entity like a land bank to take control. Even worse, some municipalities choose to bundle tax-sale properties, further encouraging purchases by investors who have little interest in living in or fixing up the properties they buy. Mallach noted that Michigan's laws are a good model for requiring that cities and community organizations work together to sell properties to responsible investors.

**Future Directions: The Interplay between Neighborhood and National Responses to the Foreclosure Crisis**

Ingrid Gould Ellen, director of the Furman Center at New York University, a National Neighborhood Indicator Partnership (NNIP) member, and member of President Obama's transition team on housing and foreclosure issues, delivered the final address. Ellen began by noting...
the depth and breadth of the foreclosure crisis. Since 2005, there has been a
four-fold increase in foreclosures in the United States. The Mortgage Bankers
Association estimates that 1.7 million properties entered foreclosure in 2008.
Credit Suisse estimates that another 8 million are at risk of foreclosure in the
next four years absent intervention.

Foreclosures are most highly concentrated in Florida, California, Arizona, Nevada, and Michigan. They are particularly concentrated in certain metropolitan neighborhoods, often moderate income minority neighbor-
hoods. For example, in New York City, foreclosures are concentrated in just
10 of the city’s 59 community districts, and 9 of these districts are at least 85%
residents of color. These concentra-
tions cause negative externalities that increase the impact of foreclosure on
the community.

Ellen explained the three-part strategy the Obama administration has
developed to respond to foreclosures: prevention, mitigation, and regulatory
reform. Prevention efforts include the Make Home Affordable program, which
subsidizes lenders to write down or modify loans; encouraging refinancing,
initially targeted to government-secured enter-
prise loans through Fannie Mae or Freddie Mac; and help for so-called
underwater borrowers through the Hope
for Homeowners program. Foreclosure
mitigation efforts are being funded
through the Neighborhood Stabiliza-
tion Program, which provides capital to
purchase foreclosed properties, demolish
dilapidated properties, or rehabilitate
salvageable properties that can be resold
to new homeowners. Regulation and
reform efforts seek to control fraud and
make lenders and the financial system
more accountable.

Because the symposium and discus-
sions focused on community impacts, Ellen offered several observations about
the initial Neighborhood Stabilization
Program (NSP) results. The first
round of funding ($3.9 billion) was
allocated by formula, so the funds were
spread thinly across the country and
there was little effort to strategically
target investments. In areas of high
need, there was not adequate capacity
to fully use the funds and little lever-
aging of private capital. The second
round of Neighborhood Stabilization
Program (NSPII) funds ($2 billion) will
be allocated through a competitive
process. Targeting and market analysis
are major criteria for selection for this
program. Successful applicants will
need to think hard about strategically
targeting resources, conducting a market
analysis to determine what strategies
match the needs of the community,
and coordinating efforts with a com-
prehensive regional plan. Capacity and
the ability to leverage other funds will
also be an important consideration to
assure that the funds will be used well.
Because NSPII is focused primarily on
acquiring and rehabilitating proper-
ties or producing new housing, most of
these funds will be targeted to vulner-
able transitional neighborhoods—that
is, the market destabilization communi-
ties Mallach described, where demand
potentially exists, but may need public/
nonprofit intervention to trigger effec-
tive demand.

Ellen argued that a variety of impor-
tant activities need to occur at the
local level, in conjunction with federal
funding, to effectively respond to the
foreclosure crisis. Many of these local
strategies were presented during the
symposium: increased code enforce-
ment, land banking, demolition,
greening strategies, etc. Also important
are statewide initiatives, including those
mentioned at the symposium: point of
sale inspections in Pennsylvania, the
New Jersey law that transfers liability
for code enforcement directly to the
creditor as soon as a foreclosure notice is
issued, renter protections in New Jersey,
vacant property registries and fees in
Cincinnati, and land banks authorized
by state legislation to facilitate tax
foreclosures.

Ellen concluded her remarks
by offering six ways that NNIP can
contribute significantly to the neighbor-
hood response to foreclosures:

1. Identifying individuals at risk. The
research on homeowner counseling
consistently shows that the earlier
you reach out to borrowers at risk of
foreclosure, the more likely the inter-
vention is going to be successful.
This approach will help assure that
the new array of federal resources for
loan modifications can successfully
avert more foreclosures. Borrowers or
renters who may not be able to stay
in their homes should also be identi-
fied to provide them graceful exits
and to help them find new homes.
Homeless shelters that are seeing an
increase in families from foreclosed
homes requesting shelter should
be helped to better target their out-
reach efforts. Finally, school systems
should strive to identify children
who are at risk of being displaced
by foreclosure because there may be
serious impacts on their educational
performance and experience.

2. Targeting properties. This approach
is useful for code enforcement, for
identifying vacancies, and for fore-
closure diversion. NNIP can help
identify servicers of foreclosed prop-
ties to facilitate acquisitions, and
can also analyze crime data in areas
with foreclosed properties to help
focus police resources.

3. Target neighborhoods. NNIP can
provide the analysis to target NSP
investments to neighborhoods that
will be best served by NSP funding.

4. Matching strategies to the market.
An analysis of local markets can help
local governments (and NSPII grant-
ees) identify strategies that address
the particular needs of a neighbor-
hood.

5. Evaluation. We know very little
about what works, and all of the
baseline and performance data NNIP
partners have makes the organiza-
tions well positioned to conduct
evaluations.

NNIP can play an important role to
convene people from around the
country to learn from one another
and share best practices. Because this
is uncharted territory, it is valuable
to share experiences and determine
how to better respond to the foreclo-
sure crisis in neighborhoods.

Conclusion
The symposium made clear the
complexities of the housing foreclosure
crisis and the far-reaching implications
the ongoing crisis has for neighbor-
hoods. The problem requires a range
of strategies tailored to specific neigh-
borhood market conditions to build
stability and reduce destabilizing factors.
Successful implementation of these
strategies necessitates a close working
relationship between local governments,
intermediaries, community organiza-
tions, and community development
corporations.

Kris Nelson is director of neighborhood
programs at the Center for Urban and
Regional Affairs (CURA) at the University
of Minnesota.
Word Up: Using Spoken Word and Hip Hop Subject Matter in Pre-College Writing Instruction

by Geoffrey Sirc and Terri Sutton

Spin on your head. Find Davy Crockett in Lil Wayne. Hear two University professors contest the psychology of oppression. Write a poem, revise it with a mentor, set it to a beat, perform it onstage, spotlighted. (Watch your high-school English teacher do the same.) Explore the University Libraries’ academic search engines. Discover a Lost Poet. Draw graffiti outside Vincent Hall (on paper, please).

Stir the above into four head-spinning days, and you have a day camp for the ages (15 to late 50s, all told). Last summer, from June 24–27, 2008, the Department of English at the University of Minnesota partnered with the Minnesota Spoken Word Association (MnSWA) to inaugurate an outreach literacy program for local high-school students and teachers. The four-day institute, named “In Da Tradition,” used spoken word and hip hop to teach academic and creative writing to 35 core-city high-school students. In addition, 20 high-school teachers writing and researching alongside the students witnessed an instructive model for utilizing the subject in their public-school classrooms—both for creative writing and academic research projects. In Da Tradition was supported in part through a grant from CURA’s New Initiatives program. Additional funding was provided by Education Minnesota’s Affinity Grant Program, the Urban Research and Outreach/Engagement Center, and the Department of English at the University of Minnesota.

Roots of the Institute
Since 1993, English Professor Geoff Sirc has taught the class Researching Hip Hop at the University of Minnesota,
first in the General College and then in the Department of English. Underlying that course is the assumption that students learn a great deal about how to think, read, and write like a scholar by focusing on a subject that they already understand in powerful ways. This has been a foundational tenet in the history of college writing instruction. Surveying freshman composition in 1965, for example, Robert Gorrell of the National Council of teachers of English noted, “the most important need is to get the student excited about something so that he is stimulated to write about it.”

Hip hop, as the second largest selling music genre in the United States, easily satisfies the requirement for excitement; students’ prior knowledge of hip hop gives them an easier entrée into the language, strategies, and techniques of college writing at a major research university.

In the spring of 2007, English professor and department chair Paula Rabinowitz and English event coordinator Terri Sutton began talking with executive director E. G. Bailey and artistic director Shâ Cage of MnSWA about possible public engagement collaborations. MnSWA was created to inform and help to develop the art form of spoken word in Minnesota. Since 2001, MnSWA has been bringing its Spoken Word Residencies to Minnesota middle and high schools (including continuing relationships with Minneapolis’ Patrick Henry High School, Roosevelt High School, Northeast Middle School, and Marcy Open School (grades K–8), as well as high schools in St. Cloud and Duluth), working to make literacy fun, innovative, and accessible to all kids. MnSWA also sponsors the Quest for the Voice! Youth Slam Series, taking a Minnesota youth team to the Brave New Voices International Youth Poetry Slam Festival annually. MnSWA co-created the First Wave Spoken Word Learning Community at the University of Wisconsin–Madison; however, Bailey and Cage wanted to establish a working relationship closer to home, with the University of Minnesota.

One of the first ideas discussed by Rabinowitz, Sutton, Bailey, and Cage was a summer camp for high-school youth that would use creative writing—in the form of spoken word—to encourage literacy. MnSWA believes that the tool of poetry can reach students in Minnesota that the educational system has failed; to that end, it also is committed to training teachers in using creative writing in the classroom. Rabinowitz was also interested in teacher training, as Department of English faculty had 20 years ago initiated College in the Schools, an accredited concurrent enrollment program in which high school students take a University course (with the pace and standards that implies) under the direction of a high school teacher trained and overseen by University personnel. It was not long before Bailey, Sutton, Cage, and Rabinowitz decided that participants in any English/MnSWA summer day camp collaboration should include high-school teachers as well as their students. Given Professor Sirc’s interest in hip hop, as well as that of other English faculty (most notably associate professor Evelyn Ch’ien, who teaches and researches hip hop music and literature), the focus of the proposed day camp was soon further enlarged to encompass both spoken word and hip hop, as well as academic and creative writing. Professor Sirc joined the project in the summer of 2007.

In the fall of 2007, the Center for Teaching and Learning at the University of Minnesota awarded Professor Sirc a 2007–2008 Multicultural Teaching and Learning Fellowship Grant through its Initiative for Pursuing Excellence in Multicultural Teaching and Learning. The primary objective of his proposed project was to investigate the possibility of using the subjects of spoken word and hip hop to introduce diverse high-school students to the inquiry patterns and analytical tools of college-level writing. Again, by focusing on subject matter in which precollege students very likely have expertise, the project aimed to demystify both the process and content of knowledge-making at the college level—and to demonstrate the feasibility and value of postsecondary study (especially in English at the University of Minnesota) for Twin Cities urban high-school students.

The Multicultural Teaching and Learning Fellowship Grant allowed Sirc to hire an undergraduate research assistant to help Sutton raise funds.
for and manage the summer camp, which we now call an “institute.” Sirc strategized programming with Bailey and Cage from the winter into the spring. Sutton received significant advice and programming ideas from Muriel Thompson and Kirsten Jamsen, directors of the Minnesota Writing Project at the University, who offer annual training programs for Minnesota teachers; in 2006, Jamsen had organized a week-long residential summer writing camp for middle-school students and their teachers on the University of Minnesota campus called “Gopher Writing Camp.” In addition, the regular meetings with the other Multicultural Teaching and Learning fellows at the University encouraged Sirc’s thinking and planning around using multicultural subject matter to encourage literacy and interest in cultural analysis—in other words, to expand the understanding and practice of teaching and learning in a multicultural context. Prior to this, nothing like the proposed spoken word and hip hop summer institute was being offered in the Twin Cities. As a former General College faculty member, Sirc became committed to two principles: the imperative for education to address all cultures equally, and the need for the University to broaden its mission to the larger community. This project would do both, in a way that would address the needs of some of the most creative and at-risk students in the Twin Cities’ urban area.

For the department, one of the project’s most appealing goals was to show students who might not be thinking of attending the University that there is a place for them here; students who participated in our summer institute would learn how the University works as a knowledge-making enterprise, how research questions are formed and investigated, how information resources are brought to the problem, how collaboration helps with inquiry, and how the results of analysis are written up in academic prose. Our students would not only be learning academic inquiry, they would also be learning about academic tools (particularly our online library) to see how information is searched, evaluated, and applied to an important cultural question. Although MnSWA had ensured that there were programs in the public schools helping students compose and perform spoken word and hip hop, none were using hip hop as a bridge to academic culture.

Establishing a “Tradition”

At 10 AM on a June morning promising heat to come, the first annual In Da Tradition Spoken Word and Hip Hop Institute took over the basement of Vincent Hall on the East Bank of the University of Minnesota campus. A crowded check-in table processed teachers and students from North High School, Highland High School, Dunwoody Academy, Plymouth Youth Center Alternative High School, and South High School (one teacher came from as far away as South Dakota, where she teaches at St. Francis Indian School). Five spoken word and hip hop mentors—some still in high school themselves, all experienced writers and performers—encouraged the milling participants to take seats in an auditorium’s air-conditioned luxury. Bailey, Cage, Sirc, and Sutton introduced themselves, welcomed the participants, and explained the program; Cage, a veteran actress (Illusion and Frank Theaters, among others) and spoken word recording artist, roused the sleepy teenagers with call and response. We split participants into two groups, and we were off.

The daily schedule featured morning and afternoon sessions that
Another teacher participant wrote:

which is often mistakenly thought of

a history of spoken word poetry,

early writing. As one teacher commented

some claim in their argument and then

Each student found a source to support

particularly the index of scholarly

resources of hip hop, as well as two

tracks which over the week we used as a

starting point for researching academic

criticism, finding antecedents of hip

hop mythology in American literary

history, and framing one’s own critical

argument and substantiation.

Following Gerald Graff’s advice in

Beyond the Culture Wars to “teach the

conflicts,” students in Sirc’s class began

by reviewing some of the media’s most

virulent attacks against hip hop. Then,

students were asked to write a brief

response to such claims, either agreeing

or disagreeing with the media’s depic-

tion of hip hop as a problem. Students

reviewed those paragraphs the next day,

with Sirc explaining that such personal,

expressive writing can be made more

persuasive in an academic setting if

there is some kind of strong theoretical

or research-based support to bolster

one’s opinions. Students were exposed

to the University Libraries’ website,

particularly the index of scholarly

articles, as well as some search strategies

for using those indexes productively.

Each student found a source to support

some claim in their argument and then

revised their writing accordingly. The

students then received a mini-lesson in

the principles of research-based schol-

arly writing. As one teacher commented

on the evaluation forms,

Geoffrey Sirc’s lectures, taking ‘G’z

and Hustlers’ and turning it into

both a teaching opportunity and

sociological lesson on oral literature

of the last 300 years, was enter-

taining and a great example for me

as a teacher how to use a difficult

text to provoke discussion and get

students to dig into their opinions.

Bailey led the participants through

a history of spoken word poetry,

which is often mistakenly thought of

as a phenomenon of the last decade.

Another teacher participant wrote:

Beginning from the first day, when

E.G. Bailey played samples from

three generations of spoken word,

it was an introduction in the richest

sense to the tradition of spoken

word and hip-hop. I’ve been writing

spoken word, listening to spoken

word, and using it to teach teenagers

for the last two years but had no

sense of it coming out of a tradi-

tion. In teaching us that tradition,

E.G. gave us as both artists and

educators a huge dive much deeper

into spoken word and hip-hop, to

analyze it artistically, to find new

artistic resources and to pass the

tradition on to a new generation.

Each morning session ended with

a demonstration by hip hop artists,

including break dancers, a turntable

disc jockey, and graffiti artists, as well

as time for the students to try each

form. We will not soon forget watching

champion break dancer Damian

“Daylight” Day (the Star Tribune called

him “Minnesota’s most famed b-boy”)...

back-flipping down the stairs of the

Vincent auditorium. The Institute
definitely attracted attention as high-
school teachers and students alike

experimented with the “aerosol arts”
on a long roll of butcher paper across

the Northrop Mall lawn (under the

spray-can tutelage of some Twin Cities

graffiti artists who shall remain name-

less). After lunch, we held two after-

noon sessions, and the day ended with

writing and research time and indi-

vidual meetings with mentors. Par-

ticipants wrote a spoken word or lyric draft

on the first day and received advice on

revision and performance as the week

continued.

Friday, our final day, began with an

electrifying artist and scholar panel,

which included University professors

Alexs Pate, Na’im Madyun, Carol Miller,

Pat James, and Julie Schumacher, who

were joined by long-time Twin Cities

spoken word artist J. Otis Powell! as

well as some of the Institute’s mentor-

artists (such as 16-year-old hip hop artist

Chantz, who has visited Professor Sirc’s

classes in the past, and University of

Minnesota English major and spoken

word artist Moira Pirsch). The focus of

the discussion was the exciting scholarly

and creative work being done on the

University campus—which the students,

they were told, should aim to join.

Many student participants expressed

interest in taking University classes

as a teacher how to use a difficult

text to provoke discussion and get

students to dig into their opinions.

Friday ended with a rousing showcase

at the Whole Music Club in the

University’s Coffman Union, in which

the Institute’s students—both high-
schoolers and their teachers—took the

stage to read what they had created

over the week, amid performances by

professional Twin Cities spoken word

and hip hop artists such as Truthmaze

and Maria Isa Perez. At one point, a

teacher and two of her students read

together, all clutching their papers with

shaking hands, each articulating with

sincerity and artfulness—and every one

high-fiveing the others with relief at the

end. As one participant put it on her

evaluation form: “Treating us as artists!!

Priceless!”

Results

The students provided baseline

academic writing samples at the begin-

ning of the Institute, which they then

fleshed out and revised during the

week’s activities. At the end of the week,

Sirc collected the revised works, which

showed a clear improvement in the use

of research to back up arguments, more

thoughtful construction of arguments

(less “ranting”), and more deliberate

use of language. One student described

what he/she had discovered: “I learned

a lot about all types of artists and how

each artist defined themselves. How to

research and back up arguments. Time-

line of hip hop. Elements of hip hop.

Different authors/critics. Ways to review

albums. Vocabulary.”

Evaluation forms from both student

and teacher participants gave the

programming high scores for breadth,

intensity, and inspiration. Nearly all

the teachers said that they were carrying

useful new tools back to their class-

rooms—and that they would enthusi-

astically attend a second offering of the

program next summer that presented

an advanced track for this year’s partici-

pants. “[The Institute] is a huge tool for

teachers who want to introduce spoken

word and hip hop into their class-

rooms,” wrote one teacher. “There are

few opportunities for teachers to learn

about the history of these traditions,

and understanding the tradition is a

great way to create connection between

older teachers and younger students.”

As for the students, most agreed that
“this Institute needs to reach more people

around my way, because it will at least

get people’s minds thinking a lot more. I

know my mind is.”
In February 2009, we polled the teacher participants again as to how the techniques that they learned at the Institute had worked out in their classrooms. We received a 50% response rate from the 20 teachers who attended. Asked how much Bailey’s and Sirc’s class session tracks affected their teaching practice, on a scale of 1 (very little) to 10 (very much), all but two responded with scores between 6 and 9. Two low scores of 3 came from two teachers who filled out the survey together with a note that said that the classes “helped strengthen” their teaching practice, but that they “already had a strong foundation.” (When asked if they would return for a second year of the Institute with an “expert” track, the two responded “Absolutely!!”) The teachers described what they had done in their schools as a result of the Institute, including expanding spoken-word units, initiating poetry slams, hosting class guests who were guest artists at the Institute, applying and receiving grants for expanded hip hop programming, establishing Open Mic events, and in general enhancing classroom teaching with the knowledge gained. Teachers mentioned regularly using Bailey’s writing strategies and Sirc’s analogies about the importance of research in the construction of an argument. One teacher wrote:

I … loved the research process that Professor Sirc modeled. As a learner, the materials were engaging and thought-provoking.

Another responded:

[He] was able to find a topic (hip hop lyrics) that sparked a reaction by everyone in the room. I’ve definitely used that technique to engage students who don’t seem to be otherwise interested in reading and writing.

Our goals for the Institute were two-fold: to develop in urban secondary students a sense of confidence in themselves as scholars and writers, and to show high-school instructors how to use multicultural subject matter to encourage students’ literacy and their interest in cultural analysis—subject matter with which students are already familiar. We witnessed the development of the former through the week in the construction of creative and scholarly writing pieces. The Friday artist and scholar panel benefited from the students’ confident questioning of their mentors and advisors. In terms of the latter goal, the high-school teachers told us they were energized by how much they learned regarding teaching multicultural communities, while at the same time giving us great advice for expanding and improving the program for summer 2009.

Future Traditions
Both the University’s Department of English and MnSWA are on board to make a second edition of In Da Tradition a reality. Together we have critiqued last summer’s programming and compiled ideas we believe will strengthen the Institute, including more hands-on opportunities to try out hip hop art forms and more individual mentoring in both creative and scholarly writing. We also plan to more widely publicize the Friday showcase within the University and local communities. This year we will host students from new schools (Perpich Center for Arts Education, Southwest High School, the Multicultural Indigenous Academy St. Paul charter high school) alongside previously participating schools (South, North, Plymouth Youth Center, Dunwoody Institute). After experiencing some student dropout last year, we decided to focus on the schools that participated successfully. As a consequence, the program may involve one-third fewer participants than last year, but we feel more certain of their commitment to the program. Finally, this past year we were only able to involve one University of Minnesota undergraduate in a limited capacity; after the fact, we discovered more than a few undergraduate and graduate students interested in playing a part in the activities, whether as mentors or participants. This summer three undergraduates with backgrounds in creative writing, hip hop, and service learning around literacy will act as mentors for Institute participants. Stipends for the students will be funded by a University of Minnesota Academic Initiative in partnership with Coca-Cola.

Using In Da Tradition for Public Engagement
Involving more Department of English students at the University in the Institute presents an exciting opportunity to strengthen the department’s public engagement. Currently, the department is involved in a two-year process through the Engaged Department Program (run by the University’s Office of Public Engagement). The Department of English on the Twin Cities campus is one of seven departments systemwide to be awarded $10,000 to plan, establish, implement, and evaluate strategic initiatives that advance the integration of public engagement into research and teaching activities. For years, the Department of English has been implementing a variety of public-engagement initiatives. For example, it trains both current and future public-school teachers; in addition to working with current teachers through College in the
Schools, many Department of English graduates become K–12 teachers. The department also puts many of its undergraduates to work in the community, as it has one of the strongest service-learning programs in the University’s College of Liberal Arts. The department’s primary goal now in terms of public engagement is to establish an integrated curriculum around engagement from introductory to capstone courses, and to create extracurricular opportunities for teaching and mentoring along the way. Connecting service learning-oriented English courses with the department’s public engagement programming (such as the In Da Tradition Institute) will broaden and enhance students’ public engagement arc within English.

As more than one of our teacher survey respondents noted, hip hop culture is youth culture. Engaging with it engages students who may otherwise be uninterested in reading and writing. The Institute focuses on the history, significance, pedagogy, and performance of spoken word and hip hop in order to encourage literacy, to inspire core-city high-school students to work toward postsecondary education, and to expand all of our ideas of what is possible both in academic scholarship and in creative writing. As we witness the teachers and students (one now acting as a teaching assistant in her teacher’s classroom) bringing knowledge gleaned at the Institute to schools and centers across the Twin Cities metropolitan area, we can see those goals in action. “[W]hat we learn through the course of these workshops, lessons, and discussions,” noted one teacher participant, “goes further than what one person takes away.” Or in a student’s simpler terms, “This is dope.”

Geoffrey Sirc is professor of English at the University of Minnesota. His research and teaching interests include the history, theory, and practice of writing instruction; popular culture; and digital media. Terri Sutton is the Informational Representative for the Department of English. She received her MFA from the Creative Writing Program in the Department of English in 2001.

The In Da Tradition Spoken Word and Hip Hop Institute was supported in part through a grant from CURA’s New Initiatives program. These grants support projects that are initiated by faculty, community organizations, government agencies, or students and that fall outside CURA’s existing program areas. Additional funding was provided by Education Minnesota’s Affinity Grant Program, the Urban Research and Outreach/Engagement Center, and the Department of English. To learn more about the program, visit english.cla.umn.edu/alumni/SummerLiteracyProjects.html or e-mail Terri Sutton at sutt0063@umn.edu.

---

**Update on CURA’s Neighborhood Partnership Initiative**

During the last two years, CURA has funded 24 innovative neighborhood partnerships through the Neighborhood Partnership Initiative (NPI). Made possible by a two-year grant from the McKnight Foundation, the purpose of NPI is to foster innovative, effective partnerships that increase involvement of immigrant, underrepresented, and youth constituencies in solving neighborhood problems in Minneapolis and St. Paul.

Response to the program has been impressive, with 61 innovative project proposals received. Many of the organizational partners had not previously worked together, but came together to leverage their program skills and neighborhood connections. Some examples of projects that have been funded include the following:

- “Sidewalk Saving Lives,” a partnership among Hawthorne Community Council, Juxtaposition Arts, Kwanzaa Church, Avenues for Homeless Youth, Northside Arts Collective, and Homewood Studios, organized a one-day event involving 75 youth painters and 10 adult artists to paint positive HIV/AIDS prevention messages on 10 north Minneapolis sidewalks. The sidewalks, which were painted in September 2008, attracted hundreds of community members and provide continuing education about this important community health issue.

- Lyndale Neighborhood Association and Youth Farm organized diverse community members to transform two garden sites into safe public spaces in south Minneapolis. Strong connections were made with and between Somali, Latino, and other community members in this project. These relationships also helped identify important community concerns that continue to inform the work of the neighborhood organization.

- Thomas/Dale District Seven Planning Council and the Center for Hmong Arts and Talent (CHAT) partnered to create a 10-week pilot program to engage Hmong youth in neighborhood issues while using their talents as artists. This project has contributed to greater participation of Hmong residents in the neighborhood, and the election of two new Hmong board members to the Planning Council Board of Directors.

The success of NPI underscores the value of seeding partnerships between community organizations to broaden community involvement and leverage the resources and experience of community organizations. Funding is being sought to continue the program for 2010.

On the evening of November 19, 2009, CURA will convene participants from the NPI-funded projects to share their experiences and insights. Future plans for the program will also be discussed. For more information about NPI or the November event, visit www.cura.umn.edu/NPI.php or contact Jeff Corn at 612-625-0744 or jcorn@umn.edu.
Residents of Minnesota often joke that the state has two seasons, winter and road construction. The joke has more than a grain of truth: Harsh winters take a high toll on our state’s highways, and the warm months are consequently filled with an intense burst of road construction and repair. This second season also exacts a high toll, and the price is paid by Minnesota motorists who suffer painful delays as lanes are closed, stretches of highway are shut down, and detours are endured. The delays not only cause stress and frustration, they also rob commuters of time that could be spent on other things, such as work or leisure activities with family and friends.

Economists refer to the cost of such delays as “user costs.” Careful empirical research by the Minnesota Department of Transportation (MnDOT) computes the individual user cost of construction delays at $12 per hour, which is approximately half the mean hourly wage in Minnesota.¹ These user costs can mount quickly. Suppose, for example, that MnDOT awards a $1 million contract for repair of Interstate 35W and gives the contractor 15 days to complete the repair. On an average day, Interstate 35W carries about 175,000 motorists in the Twin Cities metropolitan area. If we assume this construction project delays the typical driver by 15 minutes each trip, total driver delay time amounts to 43,750 hours every day, and at $12 an hour, that equals a daily user cost of $525,000. Over the 15-day project, then, user costs amount to nearly $8 million—almost eight times the fee paid to the contractor. Clearly, if MnDOT could persuade contractors to complete projects faster, even by a day or so, considerable savings would be generated in the form of lower user costs.

¹ From Office of Investment Management, MnDOT.
Unfortunately, in most instances MnDOT does not account for user costs when it awards its projects. Instead, as with most government agencies, MnDOT evaluates construction contracts using competitive bidding, just as most homeowners do when they hire a contractor. Both economic theory and data suggest that competitive bidding minimizes final payments to contractors. Because the state’s bidding system is open to any prequalified contractor and MnDOT normally awards projects to the lowest bidder, contractors do not raise bids far above costs so as to avoid being undercut by a competitor. In fact, empirical evidence indicates that contractors’ markups are quite modest, typically on the order of 1 to 3%.

However, economic theory also suggests that contractors typically have little or no incentive to minimize commuter delays, as doing so typically involves additional expenses for them, such as overtime pay, working on weekends, or forgoing opportunities to bid on alternative projects. In the face of tight profit margins, contractors are unlikely to incur these additional costs just to complete a job more quickly.

To avoid commuter delays, government agencies such as MnDOT usually retain the right to penalize contractors for late project completion. Typically, the agency sets a deadline and can impose penalties for every day the project extends beyond that deadline. In practice, however, the size of the penalty is usually quite small relative to both the user cost and total contract cost, and therefore may not provide any real incentive for completing the project on time. For a $1 million contract, as in our earlier example, MnDOT typically specifies a $1,500 daily “late fee,” which is quite small compared with the contract amount and the $525,000 daily user cost. Moreover, MnDOT has discretion in imposing fines and frequently does not penalize contractors for exceeding deadlines. MnDOT’s standard contracts also do not provide bonuses for early completion. The problems inherent in these standard practices suggest that a better process for awarding contracts could speed highway construction.

Fortunately, MnDOT and other state highway departments have begun to recognize this inefficiency and have started experimenting with alternative procedures designed to motivate contractors to complete projects earlier. One such method is lane rentals, which penalize contractors for each day they close a highway. A second procedure is A+B bidding, where contractors bid both on time and materials (the A-bid) and the number of days to complete the project (the B-bid). We discuss these experiments, in comparison with the use of standard contracts, later in this article.

Economics, to a substantial degree, is the science of achieving efficient resource use. A major goal of economic theory, therefore, is to design efficient mechanisms, that is, systems that will provide the right signals (through prices and rules) to everyone involved in a transaction so that the highest possible output is achieved with the least possible waste after all costs and benefits are considered. Given this efficiency focus, economic theory might help design better rules for awarding and paying contractors on state highway...
In our earlier example, the substantial gap between the benefits for commuters of early project completion ($525,000 a day) and the costs paid by contractors for late completion ($1,500 at most for each one-day delay) suggests that the current method of evaluating and rewarding road construction contracts is inefficient and results in substantial waste; therefore, it may well be possible to design contract incentives that benefit both commuters and contractors.

For the past year, we have studied the economics of time incentives in road construction and efficient contract design, using MnDOT contracts as an empirical case study. We were motivated by two questions. First, how can we design efficient bidding systems for highway projects that could account for both direct construction costs and indirect commuter costs? Second, what are the potential gains from switching to a more efficient system? This article summarizes some of the key findings from our study. Our complete findings are reported in our working paper, “Procurement Contracting with Time Incentives: Theory and Evidence.”

The research upon which this article is based was supported in part by a grant from CURA’s Faculty Interactive Research Program. Additional support was provided by the Grant-In-Aid of Research, Artistry and Scholarship Program at the University of Minnesota and the National Science Foundation.

**Some Basic Economics**

The various costs and timelines associated with our earlier Interstate 35W repair project example can be graphically represented (Figure 1). The contractor’s daily benefit from not completing the project (“benefit to delay”; the red line) is sizeable initially, as finishing the project in just one or two days would entail an enormous financial outlay for the contractor (hiring more workers immediately, paying overtime wages, incurring extra costs to expedite material delivery, and possibly renting or buying more equipment). From the contractor’s perspective, then, delaying project completion has substantial financial benefits. For example, the first day of delay is worth a great deal to the contractor, well over $1 million in this hypothetical example, because postponing completion for a day avoids enormous extra expenses. Another day’s delay would still be worth a considerable amount, but not quite as much as the first day’s delay. The benefits of delay diminish over time, because the extra costs of accelerating work will decrease—less overtime, fewer extra workers, and no rush delivery of materials. Eventually, no benefit is realized by delaying completion, and it is at that day (where the red line intersects the horizontal axis—day 31 in Figure 1 for our example) that economic theory predicts the contractor would choose to finish the job if no other costs were to be considered.

However, other costs do need to be considered, as demonstrated by two additional lines on the graph. In our example, the cost to commuters of a day of construction (yellow line) was $525,000 for each day the project continues. Therefore, from the very first day of construction until the last highway cone is removed, motorists as a whole will pay an aggregate daily cost (in delays, frustration, and inconvenience) of more than $500,000. The other cost is the daily penalty the hiring agency charges to the contractor for exceeding the completion deadline (blue line). Because MnDOT set the project deadline at 15 days in this hypothetical example, the penalties are zero if the contractor completes the project within that time frame. Starting at 15 days, though, MnDOT would charge the contractor $1,500 for every day the project continues (if MnDOT engineers actually choose to impose the penalty).

In economic theory, we assume that contractors are self-interested—that is, they are concerned with maximizing their profits. As a result, they will only undertake costly efforts to reduce delays if such efforts prove profitable. Given that assumption and given that our hypothetical contract starts imposing a daily penalty of $1,500 after 15 days, theory predicts that the contractor will finish the project on the 28th day, as that is the day when benefits to delay no longer exceed penalties for delay. On day 27, the contractor could still save a bit by not speeding up the project, but on day 28 those benefits drop to $1,500—precisely the penalty MnDOT imposes. Beyond that point, it will actually cost the contractor more to delay the project than to finish it. Therefore, economic theory predicts that the penalty does speed the project up a bit, because rather than the 31 days the contractor would take if no penalty were imposed, the contractor will instead finish in just four weeks.

**Seeking Efficiency**

Both economic theory and the graph in Figure 1 tell us that the efficient number of days to complete the project is 17, which is the point where the...
contractor’s benefits to delay exactly match the user costs of delay. Why is day 17 the efficient number of days? Consider day 28, the point where the contractor would ordinarily choose to end the project because benefits to delay equal the cost of delay (the $1,500 penalty). On that same day, the user cost for commuters is $525,000. Theoretically, the commuters (or MnDOT acting on their behalf) could band together and pay the contractor to complete the project in 27 days instead of 28 days. This action would benefit the commuters because they would not waste another day stuck in traffic. How much would the contractor have to be paid? The same as the contractor’s benefit to delay on day 28, $1,500 (because the project will be completed, thus avoiding the $1,500 MnDOT penalty). The commuters benefit by $523,500 (= $525,000 − $1,500) and the contractor benefits by covering his costs.

By similar reasoning, every time the red line lies below the yellow, it is possible to make someone better off and no one worse off by arranging a similar deal. However, the ability to make people better off is limited, and that limit comes on day 17. At day 16, the contractor’s benefit of delay is greater than the commuters’ daily user cost of $525,000—in the graph, the red line lies above the yellow—and even if commuters could band together, they would not come up with enough to compensate the contractor.

This example, constructed using real-world figures, suggests that a large amount of waste may occur in how standard highway contracts are awarded. Even a one-day decrease in completion time could make society better off—in other words, improve social welfare—by a $523,500 savings in commuter costs. Summing the potential benefits between day 17 and day 28—the area of the shaded triangle—demonstrates the total inefficiency of standard construction contracts. These contracts are inefficient because they do not provide the contractor appropriate incentives to economize on the commuters’ user costs of construction. By providing appropriate incentives, a better contract would reduce total costs of the project, taking into consideration both direct contractor costs and indirect commuter user costs.

Designing Mechanisms
To design more efficient contracts, we used the tools of mechanism design.

Our late colleague, University of Minnesota economist Leonid Hurwicz, was awarded the 2007 Nobel Prize in economics for his pioneering research in this field. Mechanism design is the idea of shaping systems and institutions to achieve desired goals, and one of Hurwicz’s key insights was that such systems should be “incentive compatible,” meaning that to work well, rules should take advantage of people’s self-interest. If two people want to share a pie, one of them should cut it and the other should choose the first slice. That “incentive-compatible mechanism” will use the self-interest of both cutter and chooser to ensure that the pie is divided equally.

Governments have used mechanism design to auction timber-cutting rights, radio frequencies, and even carbon-emissions credits in ways that use profit-maximizing incentives to achieve efficient distribution and maximize revenue generation. Mechanism design is also the perfect tool for shaping an efficient highway contracting system, one that will use the contractor’s desire to maximize profits to ensure that total costs (including user costs) are minimized.

Our earlier example suggests that standard construction contracts are highly inefficient for three reasons. First, contractors have poor incentives to economize on project completion time. Second, 175,000 commuters cannot “band together” to give the contractor correct incentives; only good public policy can act in the interests of commuters by providing appropriate incentives. Third, even if MnDOT wished to protect commuters’ interests, it does not know whether the contractor has high or low benefits from delay—that is, it does not actually know where the red line lies—because compared with the contractor, MnDOT has less information about actual construction costs. This lack of knowledge makes it difficult for MnDOT to give appropriate incentives even if they had the contracting tools to do so.

Hurwicz was fascinated by this sort of problem and left an important legacy for economists and public-policy makers on how to better design incentives. In our study, we applied Hurwicz’s toolbox to show how certain mechanisms can generate efficient outcomes. One such mechanism is called “lane rental,” a tool that MnDOT has already tested. In lane rentals, highway departments charge contractors a rental fee for each day they obstruct traffic by working on a project. In one hypothetical example, the lane rental can be set exactly equal to the user cost (as illustrated by the yellow line in Figure 2). In this example (case 1), where the red line resembles that in Figure 1, theory predicts that the contractor will choose to complete the project in 17 days, when the benefits and the costs of delay are exactly offsetting (where the red line and yellow line cross). This outcome is the efficient—but unrealized—result we sought in Figure 1. However, what if the red line (that is, the contractor’s benefits from delaying completion) is actually quite different,
as represented by the red line for case 2 in Figure 2? In this case, theory predicts that the contractor would complete work in 10 days. Although that outcome is better than 17 or 31 days, the yellow line demonstrates that the efficient completion time is 2 days. So even here—when benefits to delay are low and MnDOT penalties for exceeding the completion time are not a consideration—theory predicts that a standard contract will not achieve an efficient solution.

Fortunately, lane rentals provide an efficient solution to this issue. An elegant feature of a lane rental contract is that it works even in the presence of what economists call “private information.” Hurwicz knew that one party to a contract (such as a road contractor) often has information that is unknown to the other party. A properly designed mechanism (one that is incentive compatible) will account for the presence of this private information and the fact that parties to a contract will act in ways that are self-interested.

These considerations are certainly relevant in our example. Contractors on tight profit margins need to economize on costs whenever possible. In addition, MnDOT does not know in advance of bidding whether contractors have a high or low benefit to delay (i.e., whether case 1 or case 2 in Figure 2 is relevant). The advantage of using lane rentals is that MnDOT does not need to know where contractors’ red lines are. By correctly pricing the commuters’ user cost and setting lane rentals equal to that cost, MnDOT gives contractors appropriate incentives to choose the efficient completion time. Whether a contractor’s benefit to delay is high (case 1) or low (case 2), theory predicts that an efficient solution can be achieved: at 17 days in case 1 or 2 days in case 2.

In our study, we showed that another technique, A+B bidding, can also be used to avoid inefficiencies in road contracts. With this system, agencies select contractors on the basis of both an A-bid (time and materials) and a B-bid (completion time). The agency pays a bonus if the contractor completes the project before the bid completion time, or assesses a penalty if the contractor does not complete the project until after the bid completion time. MnDOT has used A+B bidding for a number of time-sensitive construction projects, including the 2008 reconstruction of the Interstate 35W bridge that collapsed in Minneapolis in August 2007.³

The rules for awarding the project under this bidding system are crucial. They must be designed with great care to achieve efficiency. First, the contracting agency needs to score the bids using both the B-bid (the user cost; in our example, $525,000 per day) times the number of days bid and the A-bid (time and materials). Second, the agency should also provide contractors rewards (or assess penalties) for every day they complete the project early (or late), and those (dis)incentives should be set equal to the user cost. For example, if the contractor bids 14 days to complete the project, but it takes 16 days, the agency should impose a penalty of $1.05 million (=2 x $525,000). A potential drawback of A+B bidding is that a poorly designed set of rules will give contractors the potential to “game the system,” that is, use the rules to achieve unintended goals. In our study, we used economic theory to characterize how contractors could indeed strategically set bids to maximize their profits.

Study Findings: Applying Economic Theory to Real-World Contract Bidding

The graphs and mathematical formulas we work with are imperfect representations of contractor incentives, government procedures, and commuter behavior. In our study, we applied our theoretical models to the “real world” of highway contract bidding. With the assistance of the Innovative Contracting Unit at MnDOT, we compiled data on contractor bids, project completion times, and user costs from MnDOT projects awarded between 1997 and 2007. Our database included 3,702 contracts; of these, only 29 were generated through A+B bidding, and the remainder were standard contracts. For 248 of the standard contracts, MnDOT provided us access to project engineer data, including comprehensive information on daily traffic counts and completion times; these data formed the bedrock of our data analysis.

³ This contract was awarded to Flatiron Construction on the basis of an A+B bid. Flatiron and MnDOT agreed to a December 24, 2008, deadline (the B-bid), and the contract stipulated that the company would receive incentive payments of $200,000 for each day the project was completed ahead of schedule. By all accounts, Flatiron and its subcontractors worked at a furious pace, with workers on the project site between 16 and 24 hours per day to maximize incentive payments. The bridge was completed on September 18, more than three months before the deadline.

A+B Bidding. We first examined the A+B contracts to see how well they conformed to the predictions of our theoretical model. We found that the data fit the theory quite well. First, our theory predicts that bidders should bid fewer days when the positive incentives offered for finishing early are lower than the disincentives associated with exceeding the project completion time, so they can “lock in” the gains for finishing early. When we analyzed the data we found a clear pattern in support of the theory: the lower the incentives for finishing early in the contract, the lower the days that contractors bid. Second, theory predicts that the dollar bid should be relatively higher in contracts with zero or small positive incentives for finishing early, because the winning contractor will receive no bonus for finishing early. We ran a statistical test to gauge the relationship between dollar bids and incentive structures and found that, as predicted, bids were higher in contracts with no positive incentives for finishing early and with high user costs. Third, theory suggests that when positive incentives for finishing early are lower than disincentives for exceeding completion times, actual completion times should be “sticky” around the bid completion date, meaning that they will tend to bunch around that point. When we graphed the completion times for the 29 A+B contracts, we observed this predicted “stickiness.”

Overall, the predictions of theory stand up well: based on descriptive analysis of an admittedly small sample, the data on A+B bidding for MnDOT contracts over a 10-year period appear to conform quite closely to our model. However, it is important to note that the theory has weaknesses in its application to the real world of bidding. For instance, an important deviation from the theory is that bidders do not in reality bid zero or even an unrealistically low number of days when no positive incentives for finishing early are offered—a strategy that theory says is optimal. Whereas it is possible that contractors do not understand the A+B “game,” it is more likely that they reasonably anticipate that their bid will be rejected as “irregular” if they claim they will finish a project in zero days.

Standard Contracts. We next examined the 248 standard contracts for which complete data were available to see how well they conformed to the predictions of our theoretical model. Again, the theory matched the
data well. In brief, the mean standard contract for this 248-project subsample had a winning bid of approximately $1 million, while the mean for the full sample was approximately $2 million. This means that our subsample was not representative of the whole. We corrected for this sampling issue in our subsequent policy analysis. The mean number of working days allowed before penalties would be assessed was 34.1. The mean time required to actually complete the project was 33.4 days. Most of the 248 contracts were completed on time (70.5%), but when they were completed late, damages were assessed in only 29% of cases (as project engineers have discretion over whether to impose penalties).

We categorized the 248 projects based on their “days late”—that is, the difference between the actual and specified project completion time (Figure 3). The figure illustrates a striking feature of the data—contractors were likely to use all of the allotted time to complete their projects. Nearly one-quarter of the standard contract projects (23%) we studied were completed just one day before they were potentially liable for penalties from MnDOT. By comparison, almost 5% of the projects were completed one day late. These data indicate that a contractor is about five times more likely to complete a project one day early than one day late. This evidence of the incentive effects of penalties on project completion time is one of our theory’s strongest predictions.

To understand these data, it is important to note that the penalties assessed by MnDOT are small compared with the project value. For example, damages on a $50,000 contract (if imposed) are just $300 for each day of delay past the deadline. However, even though the penalties are small, Figure 3 indicates that the desire to avoid damages can have a strong effect on project completion times. To complete our analysis, we also performed a more careful statistical comparison of theory and data on standard contracts to assess the “fit” between predictions for and the actual sample data for completion times. For the sample contracts, 29.5% finished late, and if late, they finished an average of 15.7% over the allotted days. Our model matched these data well, predicting that 34% of contracts will finish late, and those that will finish late will be 15.7% late.

**Saving Time and Money**

Good theory is one thing, but if it has no real dollars and cents significance, it will remain just that: a theory. Therefore, our second main goal in this project was to estimate the gains that might be achieved if government agencies improved their bidding process by using procedures that account for completion time when procuring contractor bids. To do this, we computed user costs for 167 road-repair projects in our sample of 248 standard contract projects, employing procedures used internally by MnDOT (the necessary data for this analysis were not available for all 248 projects). For each of these projects, we used Google Maps to find a detour around the project and computed the implied change in commuting time if drivers used the detour. We then computed the mean construction delay in this set of projects (4 minutes) and, using the project engineer data, we found that nearly 20,000 daily commuters would be subjected to delay due to the 167 projects. Assuming that commuters value their time at $12 per hour, this yielded a mean user cost of $15,626 per day of construction.

We also developed some new statistical tools to estimate the impact of lane rentals on contractors’ completion times. From Figure 3, we see that projects are likely to be completed just before deadlines rather than just after deadlines. By controlling for the size of the penalties and other factors, we estimated the effect of imposing lane rentals by looking at the efforts firms exert to complete projects a bit early rather than a bit late. Using these estimates, we then calculated the potential impact of three different contract policy changes, and compared them with no policy change at all. To do so fairly, we weighted our figures to ensure that our subsample of contracts (those for which we had complete data) better resembled the full set of Minnesota highway contracts.

First, we examined a very small policy change: setting lane rentals at the same daily rate at which MnDOT currently assesses delay penalties. We estimated that this would shorten project times by almost 1.5 days, increase contractor costs $1,287 per contract, and decrease commuter costs by $27,842 (Table 1). By subtracting the additional contractor costs from the lower commuter costs, we calculated the net gain in overall social welfare at $26,555, which is 1.3% of the mean Minnesota highway construction project costs of $2 million.

Second, we considered a stronger policy change: charging contractors a lane rental fee of 10% of total user cost. We estimated that this policy would shorten mean project time to just 34.7 days (down from 36.9), cost contractors $6,844 more per contract, and increase commuter welfare by $170,651. On net,
then, the 10% policy would increase social welfare by $163,807, or 8.2% of mean contract cost.

Finally, we considered a third option: the economically efficient policy that would charge a lane rental fee exactly equal to the user cost of $12 an hour. As indicated in Table 1, the result of such a policy would be striking. Projects would be completed in 21.6 days, at additional contractor costs of $144,613. Commuters would benefit by $533,266 in saved costs. The net social welfare increase would be $388,653, which is 19.4% of the mean contract cost.

Despite the potential advantages associated with implementing changes to contract processes, this approach also has some disadvantages. The decrease in user costs that could be realized through new policy stems from projects being completed earlier, which requires contractors to incur higher expenses. Recognizing this, contractors will submit higher bids to MnDOT and, through the bidding process, a fraction of these higher costs will be passed on to MnDOT. For the three policies we evaluated—lane rentals at current MnDOT penalties, the estimated additional MnDOT costs were, respectively, $12,636, $17,573, and $199,001. Because of these higher MnDOT costs, the economically efficient policy might not be politically practical, even though it would result in the largest net welfare gain. Implementing this policy for a year’s worth of construction projects (about 370 on average) would require an additional $74 million in MnDOT expenditure, a 4.4% jump in the department’s annual budget, which is a tough sell in a recession.

The intermediate policy—lane rentals at 10% of user cost—may represent a more pragmatic proposal, by increasing per project net social welfare by approximately $164,000 at additional MnDOT costs of approximately $17,600 per project. At a total cost of approximately $6.5 million for 370 road projects—just 0.4% of the 2008–09 MnDOT budget—it would yield enormous net social benefit (of more than $60 million). In addition, rather than focusing MnDOT incentives or penalties on a few high-profile projects, such as the Interstate 35W bridge reconstruction, this policy would take effect throughout the state, so that commuters at other bottlenecks would also benefit from the judicious use of state budget dollars.

Conclusion

Road construction results in substantial costs to commuters in Minnesota and elsewhere, and these costs are usually ignored because they are hard to quantify and are dispersed among thousands of commuters every day. Standard contracts used by MnDOT and other highway departments do not take these costs into account, and provide road construction firms with little if any incentive to minimize the delays that construction imposes on motorists.

A more intelligent approach to contract design, such as lane rentals or A+B bidding processes, offers great potential to speed highway repair and enhance overall social welfare. An economically efficient contract award procedure sets incentives such that contractors equate their benefit to delaying completion to the cost imposed by those delays on commuters. After developing a theoretical model of efficient contract design and analyzing a unique data set of highway contracts awarded by MnDOT between 1997 and 2007, we conclude that substantial increases in social welfare relative to commuter costs are possible at quite moderate costs. As the nation contemplates increased spending on infrastructure improvements, such efficiencies in contract design should be a central consideration.

Patrick Bajari is professor of economics at the University of Minnesota and a research associate of the National Bureau of Economic Research, with a research focus in industrial organization. Greg Lewis is assistant professor of economics at Harvard University.

The authors were aided by Tina Marsh, Dan Miller, Maryam Saeedi, and Connan Snider, all Ph.D. students in economics at the University of Minnesota, as well as Jason Kriss, an undergraduate economics major. The authors also acknowledge the help they received from engineers at MnDOT’s Innovative Contracting Unit and from construction contractors in the Upper Midwest. Both MnDOT and the contractors patiently answered many questions about the data and the industry.

The research upon which this article is based was supported in part by a grant from CURA’s Faculty Interactive Research Program. The program was created to encourage University faculty to conduct research with community organizations and collaborators on issues of public policy importance for the State and community. These grants are available to regular faculty at the University of Minnesota and are awarded annually on a competitive basis. Additional support was provided by the Grant-in-Aid of Research, Artistry, and Scholarship Program at the University of Minnesota, and the National Science Foundation.
The Center for Urban and Regional Affairs supports community-based research projects through several different programs. If you represent a community organization or agency and are unsure which program listed below is most suitable for your project proposal, simply complete a general Community-Based Research Program Application Form at www.cura.umn.edu/Programs/curaappform.html and we will route your request to the appropriate program.

The Community Assistantship Program (CAP) matches community-based nonprofit organizations, citizen groups, and government agencies in Greater Minnesota with students who can provide research assistance. Eligible organizations define a research project, submit an application, and if accepted, are matched with a qualified student to carry out the research. The application deadline for spring semester 2010 assistantships (January through May) is October 30, 2009. For more information, contact CAP coordinator Will Craig at 612-625-3321 or wcraig@umn.edu, or visit www.cura.umn.edu/cap.php.

Neighborhood Partnerships for Community Research (NPCR) provides student research assistance to community organizations in Minneapolis, St. Paul, and metro area suburbs that are involved in community-based revitalization. Projects may include any issue relevant to a neighborhood’s or community’s needs and interests, including planning, program development, or program evaluation. Priority is given to projects that support and involve residents of color. Applications from organizations collaborating on a project are encouraged. The application deadline for spring semester 2010 assistantships (January through May) is October 30, 2009. For more information, visit www.cura.umn.edu/npcr.php or contact NPCR program director Kris Nelson at 612-625-1020 or ksn@umn.edu.

The Communiversity Program funds quarter-time graduate student assistantships for one semester to help community-based nonprofit organizations or government agencies with a specific project. The application deadline for spring semester 2010 assistantships (January through May) is October 30, 2009. For more information, contact CURA community program assistant Jeff Corn at 612-625-0744 or curacbr@umn.edu, or visit www.cura.umn.edu/communiversity.php.

The Minnesota Center for Neighborhood Organizing (formerly known as the Twin Cities Training Program for Neighborhood Organizers) trains people to work effectively in organizing and staffing neighborhood organizations. It trains new organizers and increases the skills of existing neighborhood staff through internships, workshops, and other programs. For more information about the program and the training opportunities available, contact MCNO operations director Margaret Kaplan at 612-624-2300 or mkaplan@umn.edu, or Jay Clark at 612-625-2513 or clark037@umn.edu.

The University Neighborhood Network (UNN) links community organizations to course-based neighborhood projects that students carry out as part of course requirements at a Twin Cities college or university. Organizations that participate in the program identify projects with which they need assistance. UNN then locates faculty who teach courses that meet the organization’s needs, and students who have an interest in the proposed project. Participation in UNN is coordinated through a web database system. For more information, visit www.cura.umn.edu/unn/, or contact UNN coordinator Jeff Corn at 612-625-0744 or unn@umn.edu.

The New Initiative Program accepts project proposals from community organizations, government agencies, and University of Minnesota faculty and students for projects that are inappropriate for or unrelated to other CURA programs. CURA is always looking for a good new idea, and supports many new projects outside of our existing program areas. The best approach is to call us to discuss the idea; if it looks worthwhile, we will encourage you to write a brief proposal. For projects supporting government agencies, we usually seek matching funds. Maximum support for a project is generally a half-time graduate student research assistant for one academic year; support for one semester is more typical. For more information or to discuss a project idea, contact CURA director Ed Goetz at 612-624-8737 or by e-mail at egoetz@umn.edu.
Markets have always been meeting places of goods and people. The diverse public space of the Minneapolis Farmers’ Market (hereafter the Market) lies at the crossroads of transformations in agriculture, immigration patterns, and urban growth. Curiosity about particular foods, the economic difficulties of smaller farming operations, and the realities of strained food budgets intersect in this space. In current times, farmers’ markets embody many different, potentially conflicting desires: the wishes of vendors to keep farming, to make a living, and to create wealth; the hopes of sustainable farming advocates for a different food future; the longing of new immigrants for greens available in their country of origin; the demands of consumers for affordable food and the possibility to get one’s shopping done in fewer trips; and the interest of municipal leaders in attractions that will draw people to the city.

This article reports on the results from our 2008 survey of 200 Minneapolis Farmers’ Market customers. Through this survey, we sought to determine customers’ understanding of local food; customers’ food desires that are met and unmet by the Market; and relationships among food, public space, and identity. Our survey is part of an ongoing ethnography of the Market conducted by the lead author that seeks to understand race as one part of the geography of food, using the Market as a prism through which to explore these relations. This larger study proposes that inequalities in opportunities to grow, sell, and consume food are institutionalized through a racialized economy, persistent differences in property ownership, and racial segregation, among other factors. However, the Market also enables progressive interracial engagement. In short, the Market is a crucial site to explore food and justice in urban and rural communities. Our study seeks to provide insights of value to scholars, policy makers, advocates for alternative food systems, and the Market itself.

Data from our 2008 survey and the larger study have revealed the importance of the Market to the regional food system. Although we can measure the Market’s economic benefit to growers, customers, and the economy, “importance” here refers to something not necessarily quantifiable. For example, the customers we surveyed cited the particular types of foods available, the vendors themselves, the atmosphere of the place, and the diversity of customers as the aspects they like best about this Market. Because Minneapolis Mayor R.T. Rybak, through the Homegrown Minneapolis initiative,1 has recently requested recommendations to enable farmers’ markets in the area to flourish, we conclude this article with a list of recommendations that emerged from our survey and the larger study. The data we report here represent preliminary results. The research upon which this article is based was supported through a grant from CURA’s New Initiatives program.

The Minneapolis Farmers’ Market
Opening in 1876 as a wholesale market with more than 400 growers, the Minneapolis Farmers’ Market initially supplied area supermarkets with flowers and produce. As food was increasingly brought into Minnesota from states with longer growing seasons, stored in warehouses, and purchased by supermarkets, its wholesale business declined. The Market is now a retail enterprise scaled back to 220 members and run by the Central Minnesota Vegetable Growers Association (CMVGA), which rents its space on Lyndale Avenue North and Third Avenue North (hereafter referred to as the North Lyndale location) from the city of Minneapolis (Figure 1). All local producers who sell at the Market are members of this association. The Market’s vendors who sell plants, soap, ready-to-eat foods, plums,
flowers, herbs, eggs, ice cream, Hmong handicrafts, and a vast array of vegetables use most of the 175 stalls in three long sheds from the third week in April to the end of November, between the hours of 6 AM and 1 PM daily. Three meat vendors continue to sell in the Market every other week during the winter months. Its recently updated website (www.mplsfarmersmarket.com) advertises the availability of these goods, among other information.

The Market provides space for vendors through permanent places, some of which have been handed down through generations. “Dailies,” vendors without a permanent spot, are assigned different locations depending on the availability of temporarily unused stalls. The market manager answers to a board, which currently consists of 10 men and 2 women who govern the CMVGA. Most of the vendors are local producers, but the Market also includes 17 dealers who resell goods such as strawberries, mushrooms, flowers, and grapes purchased wholesale. Of these vendors, 11 are growers with some resold items, 2 resell shipped-in flowers, and 4 are produce resellers. These 17 vendors have 41 stalls covering 23% of available space when the Market is full on weekends. When the Market relocates to Nicollet Mall on Thursdays (6 AM–6 PM), resellers use 8 of the 60 stalls. Dealers pay more per year for their stalls than do vendors, and, unlike vendors, do not have voting privileges in the CMVGA’s annual meeting. The availability of resold goods allows people to do more of their shopping in one location. The Market distinguishes itself from most farmers’ markets in that it allows the sale of goods bought from wholesale distributors and resold, which increases the range of produce available.

The Market stands out in the renaissance of farmers’ markets that has occurred in recent years because of its age, size, location, goods sold, and the demographic characteristics of its vendors and customers. It is not part of new urbanist embellishments to old city space, but rather stands in a barren place, confusing and difficult to reach from within the city and located almost directly under the intersection of multiple highways. To some, the Market is too crowded and bustling during the weekends, but many enjoy this exciting atmosphere. In this sense, it differs from the St. Paul and Mill City farmers’ markets, which are smaller scale, more sedate operations. For customers, a market’s location is embodied in its physical place in the city, its ease of access, and its feel. These elements will result in different clienteles. For example, the Mill City Market, which is adjacent to the new Guthrie Theater and next to downtown condominiums on the waterfront, will attract a different group of shoppers than the Midtown Market on Lake Street.

On the south side of Third Avenue North lies the privately owned Farmers’ Market Annex, a for-profit space not affiliated with the Market and not a member-run business. Customers do not know that the two are separate entities and the Annex’s website suggests a closer connection than actually exists. In one sense, the variety of goods sold at the Annex enhances the carnival atmosphere of the Market. Appreciative customers told us they bought goods like oil and clothes at the Annex. But farmers’ markets in the city wish to distinguish between their efforts—which are aimed at supporting local growers, enhancing food security, and building public space—and places like the Annex. Farmers’ markets tend to be nonprofit entities organized by growers who hire managerial staff.

Unlike the St. Paul Farmers’ Market and markets organized to promote local-only food systems, nonlocal food is sold at the Market. Alternative food consumers in the Twin Cities concerned about “buying local” vote with their feet, sometimes traveling from their homes in Minneapolis to the St. Paul or Mill City markets because they are not sure how local the food is at the Minneapolis Farmers’ Market. These local food advocates either like the commitment of the St. Paul and Mill City markets to a different food system, or they like the size and atmosphere of these markets. We do not mean to suggest that the people who shop at the Minneapolis Farmers’ Market are not concerned about the quality of their food, the viability of area farmers, or the sustainability of the farming methods. The majority of the food sold at the Market is in fact local and its local produce is of the same quality as that sold at other farmers’ markets.

Particularly in the last 15 years, the Market has hosted an increasingly diverse population of vendors and customers. The Twin Cities are home to newer immigrant communities, arriving under different terms, including peoples from Laos, Somalia, Nigeria, Kenya, and Mexico. Hmong people, who arrived from refugee camps in Thailand in the 1970s, began to sell produce at the Minneapolis Farmers’ Market in the 1980s, augmenting what had been for generations a market of local-only food systems, nonlocal food is sold at the Market. Alternative food consumers in the Twin Cities concerned about “buying local” vote with their feet, sometimes traveling from their homes in Minneapolis to the St. Paul or Mill City markets because they are not sure how local the food is at the Minneapolis Farmers’ Market. These local food advocates either like the commitment of the St. Paul and Mill City markets to a different food system, or they like the size and atmosphere of these markets. We do not mean to suggest that the people who shop at the Minneapolis Farmers’ Market are not concerned about the quality of their food, the viability of area farmers, or the sustainability of the farming methods. The majority of the food sold at the Market is in fact local and its local produce is of the same quality as that sold at other farmers’ markets.

Particularly in the last 15 years, the Market has hosted an increasingly diverse population of vendors and customers. The Twin Cities are home to newer immigrant communities, arriving under different terms, including peoples from Laos, Somalia, Nigeria, Kenya, and Mexico. Hmong people, who arrived from refugee camps in Thailand in the 1970s, began to sell produce at the Minneapolis Farmers’ Market in the 1980s, augmenting what had been for generations a market of somewhat ethnically diverse European American vendors. Interestingly, Hmong people currently constitute only 1% of the Minnesota population, but they account for approximately 40% of the Market vendors and 2 of the 12 CMVGA board members. Hence, different publics encounter each other’s vegetables at...
the Market, making it an important nonsegregated public space. Both resold and local produce prices are quite low compared with grocery store prices, although heirloom produce, meat, and eggs are more expensive. Although the low prices of both local and nonlocal foods are a benefit to customers, they are a concern to some growers. Because of the low produce prices, the Market attracts people who might not come were the market to sell only local or organic foods. Furthermore, the local goods sold are not only broccoli and tomatoes, but also bitter green, sweet potato leaves, and bitter melon, which attract different publics.

Compared with other spaces for buying and eating food, the Market is perhaps the most diverse public space in the Twin Cities. As in any public space, customers have particular expectations of interactions with others at the Market. These expectations range from the desire to speak to the person who grows your food and the anticipation of getting a good deal, to less conscious ideas of what food is and who ought to sell it. Unlike a supermarket or other retail outlet, the Market is open-air and located on public land. Unlike other public spaces or shopping venues for which surveillance, location, or marketing make them less open to diversity, the Market encourages a variety of people who differ in terms of race, class, age, sexual, and gender identities. Unlike the ethnic markets, such as those established by Hmong American merchants in St. Paul or Somali American businesspeople in South Minneapolis, the Market is a place comprehensible to many. However, unlike other markets, it does not cater to only well-off customers or alternative food consumers.

Survey Methods
After obtaining permission from the CMVGA board to conduct our survey, we gathered data from 200 Minneapolis Farmers’ Market customers using an instrument with 30 questions and an incentive of a $10 gift certificate to the Market. The board and market manager requested that these certificates could only be used at the Market (not at the Annex) with vendors selling locally produced goods. As a consequence, part of the survey interview required that we explain the difference between the Annex and the Market and between a local grower and a reseller. We conducted these 10- to 15-minute, mostly face-to-face interviews across the hours and days that the market is open (officially 6 AM–1 PM, all days of the week) from July to October 2008 at the North Lyndale location. We collected customer responses ourselves through note-taking, and attempted to capture the answers verbatim, rather than electronically record the interviews. Surveys done with Latino respondents were conducted in Spanish. We surveyed customers on all days of the week; however, on Thursdays we did not survey customers at the Nicollet Mall location, where most vendors relocate on that day.

To administer the surveys, we purposefully selected respondents, ensuring as much as possible that the survey reflected the diversity of ethnic/racial, gender, age, and class categories—all of which are somewhat visually discernible (Table 1). Of those we surveyed, slightly more than half were women. The age groups between 30 and 59 (30–39, 40–49 and 50-59) were more or less equally represented among our survey respondents. Thirty percent of the survey respondents had blue-collar occupations, 22% had white-collar jobs, 32% were professionals, 7% said they were retired, and the remaining respondents were unemployed, students, or self-employed. Ninety percent of Latinos were blue collar, most East Asians were either professionals (40%) or blue collar (40%), and White respondents were mostly professional (40%), as were South Asians (79%). African Americans and African respondents were split more or less evenly among blue collar, white collar, professional, and blue collar categories.

Table 1. Demographic Characteristics of Survey Respondents

<table>
<thead>
<tr>
<th>Demographic Category</th>
<th>Number</th>
<th>Pct.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Race/ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>48</td>
<td>24.0%</td>
</tr>
<tr>
<td>South Asian</td>
<td>24</td>
<td>12.0%</td>
</tr>
<tr>
<td>East Asian</td>
<td>18</td>
<td>9.0%</td>
</tr>
<tr>
<td>African American</td>
<td>27</td>
<td>13.5%</td>
</tr>
<tr>
<td>West African</td>
<td>30</td>
<td>15.0%</td>
</tr>
<tr>
<td>East African</td>
<td>14</td>
<td>7.0%</td>
</tr>
<tr>
<td>American Indian</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td>Latino</td>
<td>30</td>
<td>15.0%</td>
</tr>
<tr>
<td>Arab American</td>
<td>3</td>
<td>1.5%</td>
</tr>
<tr>
<td>Eastern European</td>
<td>2</td>
<td>1.0%</td>
</tr>
<tr>
<td>No answer/other</td>
<td>3</td>
<td>1.5%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>108</td>
<td>54.0%</td>
</tr>
<tr>
<td>Male</td>
<td>92</td>
<td>46.0%</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20–29</td>
<td>17</td>
<td>8.5%</td>
</tr>
<tr>
<td>30–39</td>
<td>66</td>
<td>33.0%</td>
</tr>
<tr>
<td>40–49</td>
<td>38</td>
<td>19.0%</td>
</tr>
<tr>
<td>50–59</td>
<td>47</td>
<td>23.5%</td>
</tr>
<tr>
<td>60–69</td>
<td>24</td>
<td>12.0%</td>
</tr>
<tr>
<td>70 and over</td>
<td>8</td>
<td>4.0%</td>
</tr>
</tbody>
</table>

Note: In some instances, values may not sum to 200 respondents due to missing data.
and professional occupations. Given the type of sample we used, our data are not strictly generalizable, but they do allow us to draw broad conclusions from within the sample about who comes to the Market, for what reasons, and what practices they employ.

Table 1 shows the representation of racial/ethnic groups in our survey sample. When selecting customers to survey, we did not attempt to obtain percentages of particular groups to reflect their representation in the general Twin Cities metropolitan area population, as determined by the U.S. Census. Instead, we made some effort to gather data from newer immigrant populations and people of color. Respondents self-identified their racial or ethnic group, choosing from the options listed in Table 1. In the statistical analyses of the data based on the race of the respondent, we collapsed some categories (e.g., East and West African; White and Eastern European); in addition, for one analysis, we grouped all respondents into two racial categories, either white or people of color.

Results
This section presents results from our survey of 200 Market customers.

Traveling to the Minneapolis Farmers’ Market. The customers we surveyed arrived at the Market from 73 different Minnesota zip codes, but also included an alternative food tourist from New York and a couple who come regularly from North Dakota (Figure 2). The majority of our survey respondents came from the neighborhoods closest to the Market—Near North (55411) and Camden (55412, 55430)—but the northeast (55418) and Brooklyn Park (55428) were also well represented. Equal numbers (five customers each) came from the Southwest (55419), Nokomis (55423), University (55413), and Calhoun Isle (55416) neighborhoods. In answer to the question, “Why do you come to this Market?,” respondents most often mentioned proximity. The vast majority (83.5%) of respondents stated that they arrived by car. The remaining respondents took the bus (4.5%), biked (2.5%), walked (2.5%), used some other means of transportation (2%), or carpooled with others who drove (5%). Those respondents who took the bus identified themselves as Latino, African American, African, and South Asian, and came from the neighborhoods of Calhoun Isle (55408), Near North (55411), Central (55402), and Camden (55412), respectively. Figure 2 shows that more respondents in the survey came from Census tracts that are in the $25,000 to $50,000 income bracket and that are more than 25% nonwhite.

Customer Attendance and Purchasing Practices. Although the Market brings its share of “basket-kickers” (a vendor term for people who look but do not buy), most customers we surveyed said that they come to the Market primarily to buy food (72%). The remaining respondents mentioned visiting for both buying food and the social experience (5.5%), for buying food and plants or flowers (18.5%), or for buying food and prepared snacks (3.5%), with one respondent (0.5%) coming mainly to support the growers. One West African woman told us that she buys, freezes, and ships greens on request from friends whose markets (in Rhode Island) do not provide the goods they seek.

Nearly all (95%) of survey respondents identified the Market as their primary market. Of those surveyed, 70% said they come only on the weekends, 11.5% come only during the week (Monday through Friday), and 18.5% visit on both weekends and weekdays. Most of the survey respondents said that they come to the Market at least twice a month, and that they stay for at least an hour (Table 2). Our respondents indicated that 10 AM is the most popular arrival time at the Market; however, 46.5% of respondents said that they prefer the hours of 6 to 8 AM.

When asked how many years they had been coming to the Market, 40% of survey respondents indicated that they have been coming for 5 to 10 years, 32.5% had been coming for less than 5 years, and 27.5% had been coming for more than 10 years. Eight percent of respondents said that it was their first year attending the Market. As we expected, most of those customers we surveyed responded that they come to the Market in the months of July, August, and September (Table 2).

Almost three-fourths (73.5%) of survey respondents said they do not attempt to go to the same vendor each time, but instead look for the best product at the best price (Table 3). However, more than one-fourth (26.5%) of survey respondents indicated that they do have some vendors to whom they are loyal. In addition to asking respondents about vendor loyalty, we also asked survey respondents, “Are there some vendors you avoid?” Overall, 23% of our respondents said that they did avoid some vendors. When we differentiated between white respondents and respondents of color on this question, 42% of white respondents indicated that they avoided some vendors, but only 16.6% of respondents of color did so. The mix of food cultures at the Market, both among vendors and customers, means that many goods are available that are unknown to the various constituencies. Many customers (58%) we surveyed told us they are not willing to try vegetables that they are unfamiliar with either in terms of taste or cooking method. White respondents indicated that they were more apt to buy unfamiliar vegetables (60%) compared with respondents of color (34.7%).

Only 8.5% of survey respondents said that they typically spend $100 or more in a single outing at the Market (Table 3). More than half (66%) of the customers we surveyed reported that they spend somewhere between $20 and $60 each time that they shop at the Market. When we examined spending habits by grouping respondents into the categories “white” and “non-white,” we found that 10.3% of respondents of color (predominantly those from East or West Africa) compared with 2% of white respondents said that they spend $100 or more. Of those survey respondents identifying themselves as White, Latino, South Asian, or African American, the majority said that they spend between $20 and $39 during a visit. The majority of African and East Asian respondents reported spending between $40 to $59.99. Comparing the spending means among racial groups, African new immigrants spend the most ($62 on average) and white people spend the least ($33 on average). Almost all (99%) of our survey respondents said that the food sold at the Market is a “good value,” the term we used in the survey, with 57% strongly agreeing and 42% agreeing.

Atmosphere. As noted earlier, the Market’s characteristics bring a flavor to its space that its customers greatly enjoy. One man told us:

It feels good here. . .what a great way to look at your food [pointing down the shed]. . .people are
Figure 2. Distribution of Survey Respondents in the Seven-County Twin Cities Metropolitan Area by Home Zip Code

Distribution of Survey Respondents in the Seven-County Twin Cities Metropolitan Area by Home Zip Code

Location of Market
* measured from centroid of zip code

Number of Customers by Zip Code*

- 7-12 customers
- 3-7 customers
- 2-4 customers
- 1 customer

Race and Income by Census Tract

Minority Population (pct. of total, 2000)

- >25%
- 10%-25%
- <10%

Median Income (by household, 2000)

- > $50,000
- $25,000-$50,000
- < $25,000

Data source: U.S. Census Bureau

Zip Codes from Survey Located Outside Map Extents

58104 - Fargo, North Dakota
56701 - Thief River Falls, Minnesota
55940 - Hayfield, Minnesota
55912 - Austin, Minnesota
55780 - Perch Lake, Minnesota
55057 - Northfield, Minnesota

Survey taken of 200 market attendees
walking around and it’s a much more social experience than a grocery store.

That social experience is highly valued, as one immigrant from Zambia told us.

It’s a very interesting, humane meeting of people. This place is very calm, peaceful. When you come here you really appreciate the beauty of people. Different races come and eat and nobody is looking at anyone in a particular way. It’s a very powerful spot in the city. It brings people together. It’s a beautiful place of this city. Hopefully America will not destroy and derail this [market] into a bigger commercial project that will not benefit the average person.

Providing something that is “like home” was another response of customers when we asked them what they liked best. The Market, according to one respondent,

Reminds [me] of home [because of the] fresh foods, [the] people from all walks of life, and because it’s open-air.

People also indicated a nostalgia for a past time that the Market satisfies. One customer said:

I like the idea of it—it’s open air, it’s old world, from an older time.

Similarly, another noted:

I love the atmosphere. We come in the morning, early—there are all those fragrances. [The Market’s] atmosphere is of days gone by. The pickles are the best here. But the atmosphere may bring me here more than the pickles. It’s the people coming and going, interacting and not interacting.

Echoing ideas that markets promote community, one white woman remarked:

[We’re] really, really glad [the Market’s] here. It adds to the reason we love the Cities so much. We come for the whole experience. We grew up in a rural area—the Market really helps foster a sense of community. It helps you connect with people around you and helps city people see that farming isn’t

| Table 2. Survey Respondents’ Attendance Practices at the Minneapolis Farmers’ Market |
|---------------------------------|-------------------------------|
| | Number | Pct. |
| **Number of visits to the Market per month** | | |
| One | 21 | 10.5% |
| Two | 47 | 23.5% |
| Three | 36 | 18.0% |
| Four | 30 | 15.0% |
| More than four | 66 | 33.0% |
| **Time spent at the Market per visit** | | |
| Under one hour | 39 | 19.5% |
| About one hour | 75 | 37.5% |
| About two hours | 60 | 30.0% |
| About three hours | 24 | 12.0% |
| Four hours | 2 | 1.0% |
| **Years coming to the Market** | | |
| Fewer than 5 years | 65 | 32.5% |
| 5–10 years | 80 | 40.0% |
| 11–19 years | 29 | 14.5% |
| 20 years or more | 26 | 13.0% |
| **Months during which respondents attend the Market** | | |
| April | 52 | 26.0% |
| May | 89 | 44.5% |
| June | 132 | 66.0% |
| July | 171 | 85.5% |
| August | 190 | 95.0% |
| September | 170 | 85.0% |
| October | 125 | 62.5% |
| November | 72 | 36.0% |
| **Days respondents attend the Market** | | |
| Monday | 18 | 9.0% |
| Tuesday | 22 | 11.0% |
| Wednesday | 30 | 15.0% |
| Thursday | 20 | 10.0% |
| Friday | 31 | 15.5% |
| Saturday | 147 | 73.5% |
| Sunday | 111 | 55.5% |

Note: In some instances, values may not sum to 200 respondents due to missing data.
completely lost on them. It’s good to have the newer generation see that it comes from somewhere—that everything isn’t mass produced, that farmers still work the land. We don’t like co-ops. If you spend 30 seconds in a co-op, you see that co-ops are snotty. They look at you like you have a third arm coming out of your head if you ask questions. The farmers’ market is common people doing what they do. One of the great things about it is the human factor, [which] is to exchange, be involved, invested—we have a lot of respect for that.

These respondents voice themes found in the larger study and in the literature about the sentiments that some farmers’ markets inspire.

Another much-loved aspect of farmers’ markets is the opportunity to converse with the producers. In answer to our question “Is the opportunity to talk with vendors important to you?” one shopper told us:

It’s very important to me to be able to talk [to vendors]. We live in a society that makes us distant from food and growers. The opportunity to switch up that dynamic is good—and they’re nice people too.

Although we found that only slightly more survey respondents (56%) speak with vendors/producers (other than to ask about prices) than do not (Table 3), we found a difference in customer behavior when we differentiated among respondents by race. White respondents (82%) engaged in speaking with or questioning the vendor to a greater extent than did people of color (48.6%) (Table 4). The difference was statistically significant even when controlling for sex.

**Views on Local, Sustainable, and Nonlocal Food.** The alternative food movement\(^3\) promotes the purchase of food produced locally, arguing that it is more fresh and therefore healthier, that it supports the regional economy rather than sending food dollars to faraway producers, and that it lowers the number of food miles our meals travel. Some advocates have made unfavorable comparisons between the St. Paul Farmers’ Market, whose vendors must

---

\(^3\) The academic literature refers to groups and individuals who support local, sustainable food systems in this way.

---

### Table 3. Survey Respondents’ Purchasing Practices at the Minneapolis Farmers’ Market

<table>
<thead>
<tr>
<th>Question</th>
<th>Number</th>
<th>Pct.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid some vendors?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>46</td>
<td>23%</td>
</tr>
<tr>
<td>No</td>
<td>154</td>
<td>77%</td>
</tr>
<tr>
<td>Patronize the same vendors each time?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>53</td>
<td>26.5%</td>
</tr>
<tr>
<td>No</td>
<td>147</td>
<td>73.5%</td>
</tr>
<tr>
<td>Buy vegetables that are unfamiliar?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>83</td>
<td>41.7%</td>
</tr>
<tr>
<td>No</td>
<td>116</td>
<td>58.3%</td>
</tr>
<tr>
<td>Ask vendors questions other than “how much”?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>112</td>
<td>56.3%</td>
</tr>
<tr>
<td>No</td>
<td>87</td>
<td>43.7%</td>
</tr>
<tr>
<td>Amount spent per visit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$0–$9.99</td>
<td>9</td>
<td>4.5%</td>
</tr>
<tr>
<td>$10.00–$19.99</td>
<td>19</td>
<td>9.5%</td>
</tr>
<tr>
<td>$20.00–$39.99</td>
<td>76</td>
<td>38.0%</td>
</tr>
<tr>
<td>$40.00–$59.99</td>
<td>56</td>
<td>28.0%</td>
</tr>
<tr>
<td>$60.00–$99.99</td>
<td>23</td>
<td>11.5%</td>
</tr>
<tr>
<td>$100 or more</td>
<td>17</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

Note: In some instances, values may not sum to 200 respondents due to missing data.
come from within a 50-mile radius, and the Minneapolis Farmers’ Market, which allows the sale of nonlocal foods. When we asked our survey respondents, “Do you buy fruits and vegetables from resellers at the Market?” nearly three-quarters (72%) said that they bought fruits and vegetables that were grown outside the region and resold at the Market (Table 5). When we differentiated the responses by race of the respondent, we found that 42.8% of white respondents and 82.8% of respondents of color indicated that they did buy from resellers. Specifically, we found that 90.9% of African respondents, 42.8% of White respondents, 55.6% of East Asian respondents, 93.1% of Latino respondents, 75% of South Asian respondents, and 85.2% of African American respondents said that they bought from resellers (Table 5). There is strong evidence that race and buying from resellers are statistically correlated even when controlling for sex. 4

We also asked whether the presence of resold food added to or detracted from the Market. A majority (64%) of the customers we surveyed responded that they added to the Market, 9.5% said that they detracted, 12% were unsure, and 14.5% had no opinion. When we analyzed the data by race of the respondent, Latinos and Africans were the most likely to indicate that resellers add to the Market, and customers who were White or of European descent were most likely to say that they detract. An African American man said that years ago he would buy from resellers, “Do you buy fruits and vegetables from resellers at the Market? … [Even so, the resellers are] like having a grocery store here. Because of the variety, it’s a plus because you have all of this produce.

But since I’ve been educated about local I prefer local…. [Even so, the resellers are] like having a grocery store here. Because of the variety, it’s a plus because you have all of this produce.

When we clustered the responses by race of the respondent, 72.4% of respondents of color stated that resellers enhance the market compared with 42% of white respondents. One respondent told us:

The resellers neither add nor detract from the Market. I know that a lot [of people] come for [resellers’ goods] so they serve that need, they bring people here.

Resellers’ pricing policy of three trays for $5.00 is very affordable; in addition, they sell mangos and plantains, for instance, which are necessities for some customers. From the evidence about purchasing practices presented above as well as data from the larger study, we can say that the presence of dealers encourages a race- and class-diverse customer base, as do those vendors selling products sought by groups other than white Minnesotans.

We next wanted to examine whether customers made an effort to buy the local goods available (Table 6), if they thought the Market was a good place to do so, and why this was important to them. The vast majority (82.9%) of our survey respondents claimed to buy locally grown food. Within this group, 100% of White respondents said they tried to buy local foods at the Market, compared with 76.4% of respondents of color (specifically, 84% of African respondents, 83% of East Asian respondents, 79% of South Asian respondents, 70% of African American respondents, and 63% of Latino respondents). This breakdown indicates that, although the idea of locally grown appears to be recognized as important by most shoppers, it resonates somewhat more with a white demographic. We then asked the respondents who had stated that they tried to buy local whether the Market is a good place to purchase locally grown products. Nearly all (99%) agreed that it is. To follow up, we asked the respondents to explain the basis for their response. Many signaled that their experiences with products’ freshness indicated that they were clearly local. Others told us they looked for signage or they asked growers about the location of their land.

We were also interested in customers’ perspectives on sustainably grown food. The term “sustainable” covers a range of possibilities, from livestock that are raised without added hormones or antibiotics to the reduced use of pesticides or certified organically grown foods. Roughly half (53%) of our respondents indicated that they try to buy such foods (Table 6). We found that 60% of white respondents and 50.7% of respondents of color stated that they try to purchase these foods (Table 7). Slight majorities of White, African, East

### Table 4. Survey Respondents’ Answer to the Question: “Do You Ask Vendors Questions Other Than ‘How Much?’”

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>112 (56.3%)</td>
<td>87 (43.7%)</td>
</tr>
<tr>
<td>African</td>
<td>22 (51.2%)</td>
<td>21 (48.8%)</td>
</tr>
<tr>
<td>African American</td>
<td>18 (66.7%)</td>
<td>9 (33.3%)</td>
</tr>
<tr>
<td>White</td>
<td>41 (82.0%)</td>
<td>9 (18.0%)</td>
</tr>
<tr>
<td>East Asian</td>
<td>5 (27.8%)</td>
<td>13 (72.2%)</td>
</tr>
<tr>
<td>South Asian</td>
<td>14 (58.3%)</td>
<td>10 (41.7%)</td>
</tr>
<tr>
<td>Latino</td>
<td>10 (33.3%)</td>
<td>20 (66.7%)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (28.6%)</td>
<td>5 (71.4%)</td>
</tr>
<tr>
<td>Female</td>
<td>66 (61.7%)</td>
<td>41 (38.3%)</td>
</tr>
<tr>
<td>Male</td>
<td>46 (50.0%)</td>
<td>46 (50.0%)</td>
</tr>
</tbody>
</table>

Note: In some instances, values may not sum to 200 respondents due to missing data.

4 Chi square was statistically significant at 0.001.
Asian, and African American respondents said they try to buy sustainably grown foods. However, when we asked our survey respondents about actual purchases, our data indicated that clear majorities do not purchase meat, eggs, or fruit produced using more sustainable methods (Table 6). No certified organic vendors sell at the Market, but the Market does have vendors who are uncertified organic producers and who advertise low-pesticide use, free-range goods, and antibiotic- and hormone-free meat and eggs.

Because the answers to the general question about sustainable foods did not align well with the answers to the questions about the purchase of specific sustainable products, we sought to determine what kind of understanding customers had of the broad concept of “sustainably grown.” We found that 26% of our respondents were not sure of its meaning. Many respondents (43%) thought about sustainable foods in terms of the effects that growing methods have on personal or family health. Another 7% of respondents worried about the environmental impact of growing methods, and 9% of respondents discussed both health and environmental effects of sustainable foods. An additional 9% of respondents were skeptical about the benefits of sustainably grown foods. However, when we asked respondents whether or not they purchased sustainable meat, eggs, vegetables, and fruit at the Market, 92 (46.5%) thought about sustainable foods in terms of the effects that growing methods had on personal or family health.

Four conclusions concerning race can be drawn from the responses we obtained from those surveyed. First, the importance of sustainability and buying local food may be understood differently across racial groups, with white customers being more attuned to these concepts in the way they are celebrated by the alternative food movement. However, in making this claim we do not mean that people of color need to be educated to understand an idea that white customers understand in a particular way. On the contrary, we suggest that alternative food, a largely white movement, might use claims such as ours to rethink its approach. Second, different racial groups may be supportive of the Market in different ways. For instance, in our survey we found that white respondents are more likely to buy local, try new vegetables, and be somewhat more loyal to vendors, but that respondents in some other racial groups spend more, do not tend to have vendors they avoid, and are less likely to ask questions (other than regarding price) of vendors. Third, some communities of color in Minnesota, particularly African Americans, Latinos, and American Indians, experience greater economic inequality and therefore are less able to afford expensive food. The Market promotes food security for these populations by being affordable and by enabling people to do more shopping in one place.

Table 6. Survey Respondents’ Preferences and Buying Practices for Local and Sustainable Foods

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Try to buy locally grown food?</td>
<td>165 (82.9%)</td>
<td>34 (17.1%)</td>
</tr>
<tr>
<td>[For those who do try to buy locally grown:] Is the Market a good place to buy local?</td>
<td>164 (99%)</td>
<td>1 (1.0%)</td>
</tr>
<tr>
<td>Try to buy low pesticide, hormone-free, or organic foods at the Market?</td>
<td>106 (53.0%)</td>
<td>94 (47.0%)</td>
</tr>
<tr>
<td>Try to buy sustainable meat at the Market?</td>
<td>16 (8.0%)</td>
<td>183 (92.0%)</td>
</tr>
<tr>
<td>Try to buy sustainable eggs at the Market?</td>
<td>14 (7.1%)</td>
<td>184 (92.9%)</td>
</tr>
<tr>
<td>Try to buy sustainable vegetables at the Market?</td>
<td>92 (46.5%)</td>
<td>106 (53.5%)</td>
</tr>
<tr>
<td>Try to buy sustainable fruit at the Market?</td>
<td>44 (22.2%)</td>
<td>154 (77.8%)</td>
</tr>
</tbody>
</table>

Note: In some instances, values may not sum to 200 respondents due to missing data.

Fourth, many similarities exist among the diverse populations who visit the Market—notably the agreement that the Market offers a good value, has very fresh produce, and provides an alluring atmosphere.

Table 7. Survey Respondents’ Answer to the Question: “Do You Try to Buy Low Pesticide, Hormone-Free or Organic Food Grown at the Market?”

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>106 (53.0%)</td>
<td>94 (47.0%)</td>
</tr>
<tr>
<td>African</td>
<td>26 (59.1%)</td>
<td>18 (40.9%)</td>
</tr>
<tr>
<td>African American</td>
<td>14 (51.8%)</td>
<td>13 (48.2%)</td>
</tr>
<tr>
<td>White</td>
<td>30 (60.0%)</td>
<td>20 (40.0%)</td>
</tr>
<tr>
<td>East Asian</td>
<td>10 (55.6%)</td>
<td>8 (44.4%)</td>
</tr>
<tr>
<td>South Asian</td>
<td>9 (37.5%)</td>
<td>15 (62.5%)</td>
</tr>
<tr>
<td>Latino</td>
<td>15 (50.0%)</td>
<td>15 (50.0%)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (28.6%)</td>
<td>5 (71.4%)</td>
</tr>
<tr>
<td>Female</td>
<td>57 (52.8%)</td>
<td>51 (47.2%)</td>
</tr>
<tr>
<td>Male</td>
<td>49 (53.3%)</td>
<td>43 (46.7%)</td>
</tr>
</tbody>
</table>

Note: In some instances, columns may not sum to 200 respondents due to missing data.
markets and, in so doing, provided the impetus for them to work collectively in the future. This group recommended that the city actively recognize its farmers’ markets as a vital part of the urban-rural economy and as providing valuable public space. It argued that public funding must be allocated for this initiative to have a greater impact. Market managers, vendors, and advocates requested that the city hire a coordinator to enable the smooth and successful functioning of markets as part of a comprehensive approach to food. This city staff member would coordinate with a Farmers’ Market Working Group. Other issues raised were the need to ensure that land was made permanently available for markets and market parking, to enable the use of electronic benefit transfer cards to make purchases at all markets, and to budget for regulatory changes associated with supporting markets.

Another welcome initiative of relevance to farmers’ markets concerns the issues of food and justice. The Twin Cities Food and Justice Alliance has been meeting for more than a year to carefully and deliberately craft its identity and aims. Members are antiracist activists and staff of nonprofits working to change the food system by supporting community gardens, new immigrant farming, and locally grown food.5

Last but not least, the Minneapolis Farmers’ Market has begun to institute changes that are very encouraging. First, its new contract with vendors stipulates that resellers cannot sell an item when that fruit or vegetable is in season in Minnesota (e.g., strawberries in late June, asparagus in May). Second, the board is opening the Market on one afternoon a week beginning in July (3–7 PM), recognizing that the 6 AM–1 PM timeframe may not serve people who work during those hours. Third, the CMVGA will be adding members for its customer base, but would also encourage food security and diverse groups’ access to public space. The City might even consider providing frequent shuttle buses to the Market on the weekends from places that have insufficient bus service.

Recommendations to Support the Minneapolis Farmers’ Market

We make the following recommendations to support the Minneapolis Farmers’ Market, based on the survey we have reported on here and the lead author’s ongoing study of the Market. Most of our suggestions fall under the issue of access, by which we mean, can people easily get to the Market and, once there, is it equally accessible to those who use cash, coupons, or food stamps to buy their food? The remaining recommendations pertain to the issue of local food.

Access

Assess and expand public transportation service to the Market. One form of inaccessibility is the literal difficulty one has getting to a food source. That physical barrier could result from a physical or emotional disability, advanced age, or it could be due to a lack of adequate transport. The Market is hard to get to if one does not drive. Most of our survey respondents said that they do not use the bus to get to the Market. According to Metro Transit, traveling from the East Lake Street–Hiawatha Avenue intersection or from the Cedar-Riverside neighborhood for a Saturday trip to the Market requires three transfers and takes an hour and ten minutes. Customers find the Market’s produce a very good value—in other words, affordable. By determining whether its bus routes help people from all parts of the city get to the Market, the City would not only invest in its Market by augmenting its customer base, but would also encourage food security and diverse groups’ access to public space. The City might even consider providing frequent shuttle buses to the Market on the weekends from places that have insufficient bus service.

Improve service to the Market for seniors and people with disabilities. By relocating to Nicollet Mall on Thursdays in July and October, featuring area growers and hosted by Susan Berkson and local producer Bonnie Dehn. Changes to the Market’s website are also planned, including new vendor pages and tweets about the Market from area residents.

Finally, the Market will start donating leftover produce to Second Harvest.

Provide options for vendors to accept electronic benefit transfer (EBT) payments. Some Market vendors accept the Women, Infants, and Children Farmers’ Market Nutrition Program coupons, but the Market does not accept food stamps. The Federal Food Stamp Program, now called the Supplemental Nutrition Assistance Program, currently serves 1 in 20 Minnesotans—far fewer than the number who are eligible. When the U.S. Department of Agriculture switched food stamps from paper form to EBT cards in 2004, farmers’ markets were excluded from receiving this flow of funds, and food stamp recipients were blocked from making food purchases at farmers’ markets. Farmers’ markets across the country are struggling with the fact that EBT-reading machines require costly and cumbersome infrastructure as well as oversight. The Midtown Market obtained grant support to purchase a wireless EBT card machine but to date it is the only farmers’ market in the state to enable the use of EBT.6 Although EBT is lauded for removing stigma (because no one can tell if the card is an EBT or a debit card), an implicit stigma remains if the geography of food procurement is restricted for those who are poor. Public space and the food security of the less well-off are undermined by this practice. The City should subsidize the purchase of EBT card machines for all farmers’ markets. Once this infrastructure is in place, the City should work with markets to advertise this new

5 For more information, contact Tom Guettler at thomasguettler@msn.com or Melvin Giles at peaceful@mninter.net.

accessibility. The Market, finally, should encourage all vendors to accept Farmers’ Market Nutrition Program coupons.

**Improve Market attendance through innovative approaches.** Proximity appears to be one of the stronger motivators for coming to the Market. We have yet to determine what is meant by proximity, but it is clear that a few zip codes were more heavily represented among our survey respondents (Figure 2). Focusing attention on those areas first through neighborhood association publicity, shuttles, or advertising might yield additional customers. The CMVGA could consider allowing community-supported agriculture operations of CMVGA members to use the site as a drop point or it could promote the purchase of goods wholesale at the Market by individual growers or by developing its own brand.

**Improve bicycle access to the Market.** The journey by bike from Lyndale Avenue South to the Market is dangerous and grim, particularly the route back, which requires traveling on roads connecting the highway to Lyndale and Hennepin Avenues. Although bike trails are well represented around the lakes, the Market, as an important public space, is not yet linked into this network. Adding direct bus lanes and trails and installing bike racks at the Market would encourage this mode of access.

**Provide cleaner and more bathroom facilities for Market customers and vendors.** Customers find that the bathrooms at the Market are not particularly clean and, for women, certainly not sufficient to their needs. For example, every weekend that we attended the Market, a line of about 10 women extended out the door of the bathroom. Adding and cleaning bathrooms would greatly benefit both customers and vendors.

**Local food**

**Review the role of resellers.** The data suggest that resellers add to the Market by providing less expensive goods and the opportunity to do more shopping in one place. Alternative food advocates and policy makers might use this information to rethink the relationships between food security and farmers’ markets and between racial identity and the ideals of alternative food. Resellers might consider catering in more ways to the newer immigrant communities that are more apt to patronize their stalls by hiring Spanish-speaking staff or selling different fruits and vegetables, thereby strengthening the entire Market. This is certainly not an argument for more reseller stalls, but instead a caution against eliminating them.

**Clarify the provenance of Market goods.** The “localness” of the Market is a question in the minds of some. Respondents described techniques they use to guess what is resold and what is local. Some also surmise that much of the produce is organic. It does not help the Market that such guessing is necessary. The place of production could be made very clear in some format whether as a handout, on the website, or at individual vendors’ stalls (both for resellers or local producers). Additionally, the Market and the vendors could make more of an effort to let customers know that the goods sold are safely produced, whether through advertising the minimal use of pesticides or the health standards to which the Market is held.

**Establish a Farmers’ Market Working Group and a city-funded Minneapolis Food Policy Council.** Farmers’ market supporters might consider convening a group that would advocate on behalf of all area markets and assist with their coordination. Those wishing to start new markets would approach this working group first and city policy would be made in dialogue with it. However, this body should be part of a food policy council located within city government that will connect farmers’ markets into comprehensive strategies for a socially just, economically viable, and environmentally sustainable food system.

Truly public space is crucial to the life of the city; it is where we must negotiate with different people, goods, and ideas. The public space of the Market must be supported not only by city and state policies to ensure its existence, but by a host of other enabling elements such as mass transit, the preservation and availability of farmland, and living wages. The way food is located, marketed, and priced can exclude the poor, people with disabilities, and people of color, but in places like the Minneapolis Farmers’ Market, it can also enable health, awareness of the local food system, and the mixing of diverse groups. Awareness of the important dimension of race in geographies of food is critical to building public spaces that promote meaningful interaction among all social groups via food consumption and to ensuring fair opportunities for everyone to farm and market their produce.

Because of its unique attributes, the Minneapolis Farmers’ Market significantly contributes toward providing the access to all groups that we have argued must be present for space to be public. But it can be more accessible, hospitable, and beneficial to both vendors and customers. Continued effort on the part of the CMVGA and greater support by the City and the alternative food community would ensure these goals are met.

Rachel Slocum is a visiting scholar at the University of Minnesota’s Institute for Advanced Study. Her work concerns the alternative food movement and race. She can be contacted at rachel_slocum@gmail.com. Elisabeth Ellsworth is a graduate student in theatre historiography at the University of Minnesota. Sandrine Zerbib is assistant professor of sociology at St. Cloud State University. Arun Saldanha is assistant professor of geography at the University of Minnesota.

The authors would like to thank the CMVGA for allowing us to administer the survey, and in particular market manager Larry Cermak, CMVGA board president Bonnie Dehn, CMVGA board member Brian Fredericksen, CMVGA communications director Sandy Hill, and assistant market manager Shur Yang for their assistance. The authors also wish to thank Wil Craig at CURA for his guidance on the project.

The research upon which this article is based was supported through a grant from CURA’s New Initiatives program. These grants support projects that are initiated by faculty, community organizations, government agencies, or students and that fall outside CURA’s existing program areas.
Local Policy Partnership Spotlights New Research Areas

by Peggy Rader

The Hennepin University Partnership (HUP), the only known major university-county partnership in the United States, is in the process of determining its focus for joint research on major policy areas for 2009–2010. The HUP staff have been developing next steps for moving forward in four policy areas identified as most critical and achievable during an April strategic planning session attended by almost 30 key leaders from both the University and Hennepin County. The idea behind the planning session was to bring focus to a small number of issues to help HUP have the greatest impact possible in Hennepin County. The four major policy areas that have been singled out are:

- human capital development through educational attainment
- child well-being with a focus on vulnerable youth
- healthy behaviors (or building healthy communities)
- understanding the impact of the baby boomer population bubble

“The titles and the language around them aren’t set in stone, but came from the participants who were trying to provide the clearest possible direction for exploring these issues,” says Kathie Doty, director of HUP.

HUP was launched in 2005, based on the concept that University researchers and county government leaders could more effectively address important local policy issues by working together. To date, its most active policy areas have been in public transportation and light-rail development, reading programs for boys, homelessness, and measurement of the health of the community.

“From my perspective, the University of Minnesota and Hennepin County are anchor institutions in the state,” says senior vice president Robert Jones. “The partnership continues to leverage the best of both institutions, especially during these critical times in Minnesota.”

Janis Callison, Hennepin County commissioner, agrees. “We need a partner to do this work, and no better partner exists than the University of Minnesota,” she says. “We need your ideas, we need your ability to gather and analyze data, and we need your energy. Your resources give us the opportunity for evidence-based decision-making, using reliable data and tapping available research expertise to better inform policy discussions.”

The guidelines for determining proposals for HUP’s policy areas for the next year were that they address a significant public policy issue, result in research intended for publication, and lead to positive impacts in the community.

The proposal named “human capital development through educational attainment” was chosen because all participants at the planning session believed that educational success affects success in all other areas of life. The group emphasized that the proposal is not aimed at school reform, but would ideally investigate the relationship between academic success and success throughout life.

The group decided that the proposal for “child well-being” should be among the top three and cautioned that it should not be too narrowly defined but should include consideration of such educational issues as increasing graduation rates.

“Healthy behaviors” was seen as a proposal that could encompass issues around vital aging and other issues that were brought to the table initially.

The original list of issues for participants to consider included increasing graduation rates; ending homelessness; child welfare—adoptions, foster care; vital aging for boomers; greenhouse gas reduction; health care—responding to national change at the local level; promotion of healthy behaviors; effective delivery of government services; rethinking the role of government; children’s mental health; environmental—solid waste management; community impacts of the economic downturn—housing and employment; and sorting of the population. At the beginning of the planning session two additional topics were added: the plight of African American men, and immigrants in Hennepin County. Session participants ended up rolling several of those topics into broader policy areas with new titles.

The complete April 29 planning session report is available online at www1.umn.edu/hup/documents/HUPPlanningSessionReportPDF.pdf. For more information about the Hennepin-University Partnership, visit www1.umn.edu/hup/.

Peggy Rader is communications coordinator for the Office of the Senior Vice President for System Academic Administration. A version of this article originally appeared in The Brief.
In Memoriam: Barbara L. Lukermann

It is with deep sadness that we report the loss of our dear colleague and friend Barbara Lukermann, who passed away on March 23 at her home in Falcon Heights after battling lung cancer. Barbara was much loved for her devotion to her community and to her students. From 1982 to 2008, Barbara was a senior research associate at CURA and a senior fellow and faculty member in the Humphrey Institute’s Master of Urban and Regional Planning Program. She also chaired the Metropolitan Waste Control Commission, was a board member of the St. Paul District Energy utility, chaired the American Institute of Certified Planners, and was president of the Citizens League.

Memorials are preferred to the Barbara L. Lukermann Service Award. Contact Dawn Fish at 612-625-9588 for more information.

Barbara will be greatly missed.