Abstract: Population growth and development at the rural urban interface (RUI) is creating challenges and opportunities for farmers. A standard theory is that agriculture will steadily decline in the face of increased non-farm competition, but closer inspection reveals a more dynamic process of change. This poster describes the leading models for describing the structure of agriculture at the RUI and presents a bivariate analyses of Census of Agriculture data to assess the extent to which certain types of farm adaptations exist in proximity to large, urban areas. The aim of this research is to identify the relationship of urbanization and the structure of agriculture.

Background & Theory
Farm structure at the RUI can be characterized by a diversity of traditional commodity farmers as well as adaptive and hobby farms exploiting opportunities to direct market farm products to proximate large, urban populations (Lockertz 1997).

To understand the spatial structure of agriculture at the RUI, several explanations/models exist:

1. Classic models of agriculture at the RUI anticipate the type of agriculture at the RUI will be organized according to distance from urban core (Von Thunnen) or land rents (Sinclair 1967).
2. Recreational services can include agri-tainment but is more often associated with outdoor recreation (hunting, fishing, birding, and horseback riding).

Researchers have assumed that alternative farming strategies such as urban oriented agriculture (Farmers Markets, CSA’s, U-Pick operations, Ag-tourism) are able to generate higher economic returns per acre, potentially offsetting the challenges of rising land values at the RUI (Lockertz 1997).

Data and Analysis
The number of farms and sales values for direct sales, greenhouse and nursery production, organic production, and direct sales of non-commercial horses were obtained for each county in the 48 contiguous United States from the 2002 U.S. Census of Agriculture (n=3068) (Table 1). Counties were coded as Metropolitan or Non-Metropolitan and were further defined as agriculturally important or not agriculturally important. Agri-tainment sales were concentrated in metropolitan counties or in metro counties with more limited agricultural activity? To better understand the spatial distribution of organic agriculture and direct sales, in some cases, counties. In this poster suppressed sales are treated as missing. Due to the small number of farms engaging in these activities sales data was suppressed for some farms and sales of each indicator.

US Census of Agriculture Data: 2002 (excluding California)

Table 1: Top Ten Counties with Organic Sales 2002

<table>
<thead>
<tr>
<th>State</th>
<th>Organic Sales 2002</th>
<th>Excluding California</th>
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</thead>
<tbody>
<tr>
<td>Texas</td>
<td>51.5%</td>
<td>80.00%</td>
</tr>
<tr>
<td>New York</td>
<td>15.2%</td>
<td>40.00%</td>
</tr>
<tr>
<td>California</td>
<td>619</td>
<td>21.00%</td>
</tr>
<tr>
<td>Florida</td>
<td>1054</td>
<td>10.05%</td>
</tr>
<tr>
<td>Kentucky</td>
<td>778</td>
<td>11.14%</td>
</tr>
</tbody>
</table>

Q1: Organic sales are more concentrated in NonMetro and AI counties, perhaps reflecting its induction into the dominant oriented agriculture identified in the literature. Organic sales are higher in AI counties when California is both included (84.5%) and excluded (68.7%).

Q2: Organic sales tend to disproportionately occur in NAI counties compared to what would be expected with total sales.

Preliminary evidence from the 2002 Census of Agriculture suggests that exclusion of California does not substantively alter the results.

Conclusions and Directions for Future Research
This analysis revealed strategies that have been generally labeled as “urban oriented” do not always occur most frequently in metropolitan areas. Direct sales, horse sales and greenhouse sales do correspond to indications of urban oriented activities that take root in places with those characteristics.

Although the majority of direct sales occurred in metro counties a substantial portion of sales occurred in metro NAI counties. High sales in these rural agricultural counties may provide future conditions for growth and agglomeration around direct sales in these settings. This trend may have relevance for those interested in building local food systems and maintaining agriculture at the RUI.

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The fact that NonMetro and AI counties stand out as the site of substantial organic production once controlling for the role of California, supports the industrialization of organic production thesis. Region ally the top 10 counties by sales and farms are dominated by California. Excluding California, the top counties reflect a greater geographical diversity that corresponds to the particular organic commodity (such as organic milk occurring in dairy regions) (Table 5).

Future research investigating urban oriented agriculture may need to further assess the secondary data available for understanding the structure of agriculture to develop a more empirically grounded view of what types of agriculture are occurring at the RUI. Our initial assumption that organic agriculture and recreational services would be more prevalent at the RUI was proven false in this work, but direct sales, horse sales and greenhouse sales remain important features to further explore in assessing the strategies of farm adaptation at the RUI.