Agriculture's Role Shrinks as the Service Economy Expands

Rural communities have sought to offset shrinking employment in the farm sector by adding value to farm products. Agricultural value-added strategies can provide only limited rural job growth. The growing importance of the service sector as an engine of job growth appears to be bringing many rural areas into the economy's mainstream, but some areas could be left behind.

Focusing on the role of farms as a source of raw materials for food and fiber products, officials in many agricultural States and communities have pursued "value-added" development strategies. Value added by businesses beyond the farm gate that produce, process, store, transport, and market food dwarfs the value created on the farm. Rural communities have often failed to retain or attract many businesses in these "value-added" sectors. Only a few cents of each dollar spent on food and fiber by consumers represents the value of farm-produced raw materials. Value-added strategies aim to keep a larger share of the consumer's dollar in rural areas. Value-added strategy proponents seek to lure food processing plants to rural areas, start new processing operations, develop new consumer or industrial uses for agricultural products, or bypass conventional wholesale-retail systems to sell food products directly to consumers.

Many Factors Determine the Best Location for Food Processing

It is tempting to take for granted that industries using agricultural inputs would naturally locate in rural areas, close to their farm sources of raw materials. However, access to agricultural inputs is only one of many factors that determine the best site for a food processor. Firms choose sites that minimize the transport costs for all their inputs, as well as their output. If inputs are more costly to transport, the best site is closer to the inputs. Industries that add value to raw farm products must obtain packaging materials and other industrial inputs, as well as livestock or grain from surrounding farms. Raw farm commodities are the dominant cost component for firms such as meatpackers and grain and oil mills that do basic processing (table 1). Because it is costly to transport live animals and bulk commodities, these operations frequently locate near the source of their raw materials—in rural areas. Many other food processing industries, such as bread, snack food, pasta, and beverage makers, use little or no raw farm commodities. They purchase flour, sugar, oils, processed sugars, and sweeteners from other processors. For these types of processors, there is little advantage to locating in rural areas. Packaging is a large cost component for many food processors, often accounting for 25 percent of materials cost. For these firms, access to suppliers of containers, labels, and other materials is often a more important consideration, as is access to customers and product distribution networks. These factors often lead firms to choose an urban location. Labor is also an important cost component, and many analysts credit the search for lower cost nonunion labor for the recent migration of meatpacking jobs from the urban Midwest and Northeast to the rural South and Great Plains.

The variation in nonmetro employment shares across industries illustrates the differences in location choices for different types of food processors. Over half of meat products manufacturing employment is in nonmetro counties (fig. 1). Between 30 and 40 percent of grain mill, fats and oils, and fruit and vegetable processing jobs are in nonmetro counties. Agricultural raw materials are important inputs for each of these industries. By comparison, beverage and bakery product plants have only 12 percent of their employment in nonmetro counties.

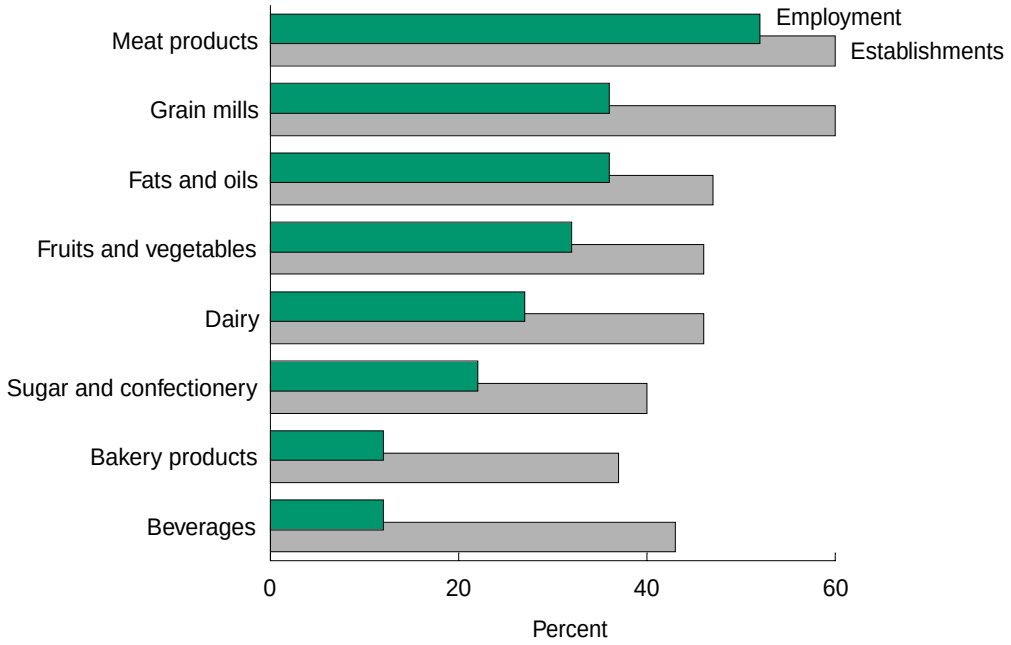
Food Manufacturing Jobs Grew in Some Nonmetro Counties During the 1990's

During the 1990's, food manufacturing employment grew by over 70,000 jobs, and nonmetro areas attracted most of the new jobs. Our analysis of *County Business Patterns* data indicates that nonmetro counties gained 60,800 food processing jobs between 1991 and 1996, partially offsetting the loss of nonmetro farm jobs over that period (table 2). Metro areas gained only 11,750 food processing jobs during 1991-96. Thus, the nonmetro share of food processing jobs rose from an estimated 29.2 percent in 1991 to 31.8 per-

Figure 1

Nonmetro shares of employment and establishments for food processing industries, 1996

Food processing industries vary considerably in their nonmetro share of operations



Source: ERS analysis of 1996 *County Business Patterns*, enhanced by Claritas, Inc., to impute suppresed data.

Table 1

Materials cost shares for selected food processing industries, 1992

For many food products, packaging accounts for a greater share of costs than farm commodities

	Type of materials and inputs used			
Industry	Farm commodities	Intermediate products	Packaging	Other
	Percent			
Meat packing	86	3	2	8
Beet sugar	83	0	1	13
Flour and other grain mills	79	5	3	10
Soybean oil mills	68	12	0	8
Fluid milk	62	8	9	15
Poultry slaughter and processing	50	18	4	15
Cheese	30	32	4	15
Wines, brandy	25	18	26	26
Potato chips and similar snacks	24	25	20	30
Prepared feeds	10	48	1	27
Creamery butter	9	73	1	15
Cereal breakfast foods	9	42	27	22
Ice cream and frozen desserts	8	32	15	44
Dog and cat food	0	36	25	31
Bread, cake, and related	0	73	10	18
Cookies and crackers	0	52	26	22
Bottled and canned soft drinks	0	42	41	18
Macaroni and spaghetti	0	52	22	26

Note: Farm commodities include grain, livestock, and other commodities produced by farms. Intermediate products include processed food products purchased from other food manufacturers.

Source: ERS analysis of 1992 Census of Manufactures.

cent in 1996. Nearly all of the nonmetro food manufacturing job growth was in meat and grain mill products manufacturing, the two food manufacturing sectors with the strongest nonmetro ties (fig. 2). Meat products manufacturing employment grew by about 45,000 nonmetro jobs, and grain mill products added about 17,000 nonmetro jobs. Dairy, bever-

Table 2

Growth in food manufacturing employment by county type, 1991-96

Most of the gain in food manufacturing jobs occurred in 357 nonmetro counties

Type of county	Counties	Employment gain
	Number	
Nonmetro counties	2,310	60,800
Gained at least 50 food manufacturing jobs	357	104,000
Lost at least 50 food manufacturing jobs	232	-44,300
Stable food manufacturing employment[1]	1,720	1,100
Metro counties	835	11,750

Note: Table was constructed using estimated county employment in 1991 and 1996 for food and kindred products manufacturing.

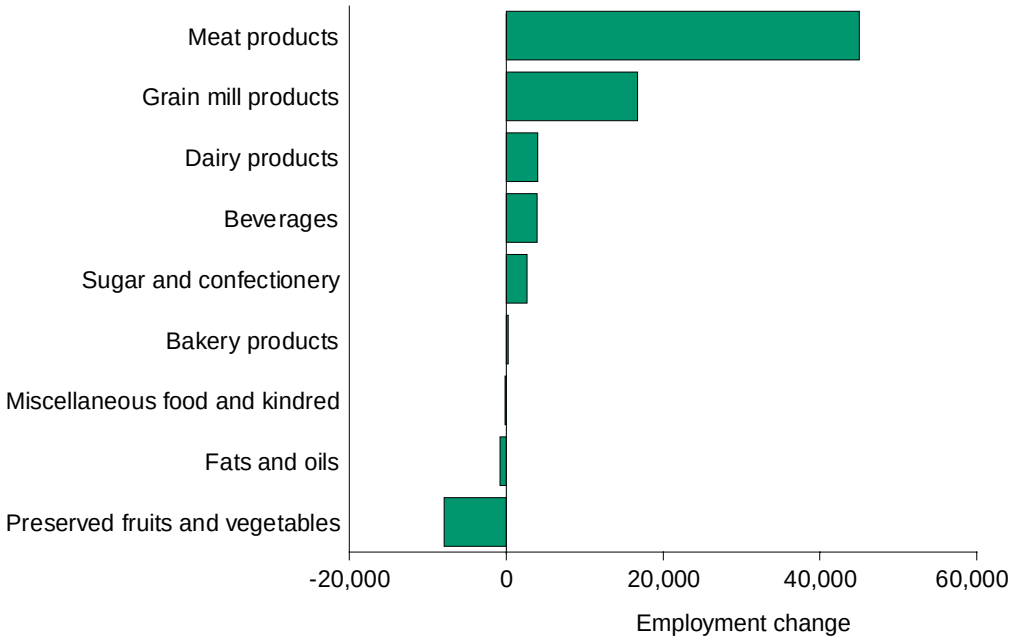
[1]Counties that gained or lost fewer than 50 food manufacturing jobs between 1991 and 1996.

Source: ERS analysis of U.S. Department of Commerce, *County Business Patterns* data, enhanced by Claritas, Inc., to impute suppressed data.

Figure 2

Nonmetro food manufacturing employment growth by sector, 1991-96

Most job gains were in meat and grain mill products manufacturing



Source: ERS analysis of 1996 *County Business Patterns,* enhanced by Claritas, Inc., to impute suppresed data.

ages, and sugar and confectionery products manufacturing each added several thousand jobs between 1991 and 1997, while preserved fruits and vegetables lost about 8,000 jobs. Nonmetro employment changed little in fats and oils, bakery products, and miscellaneous food products industries.

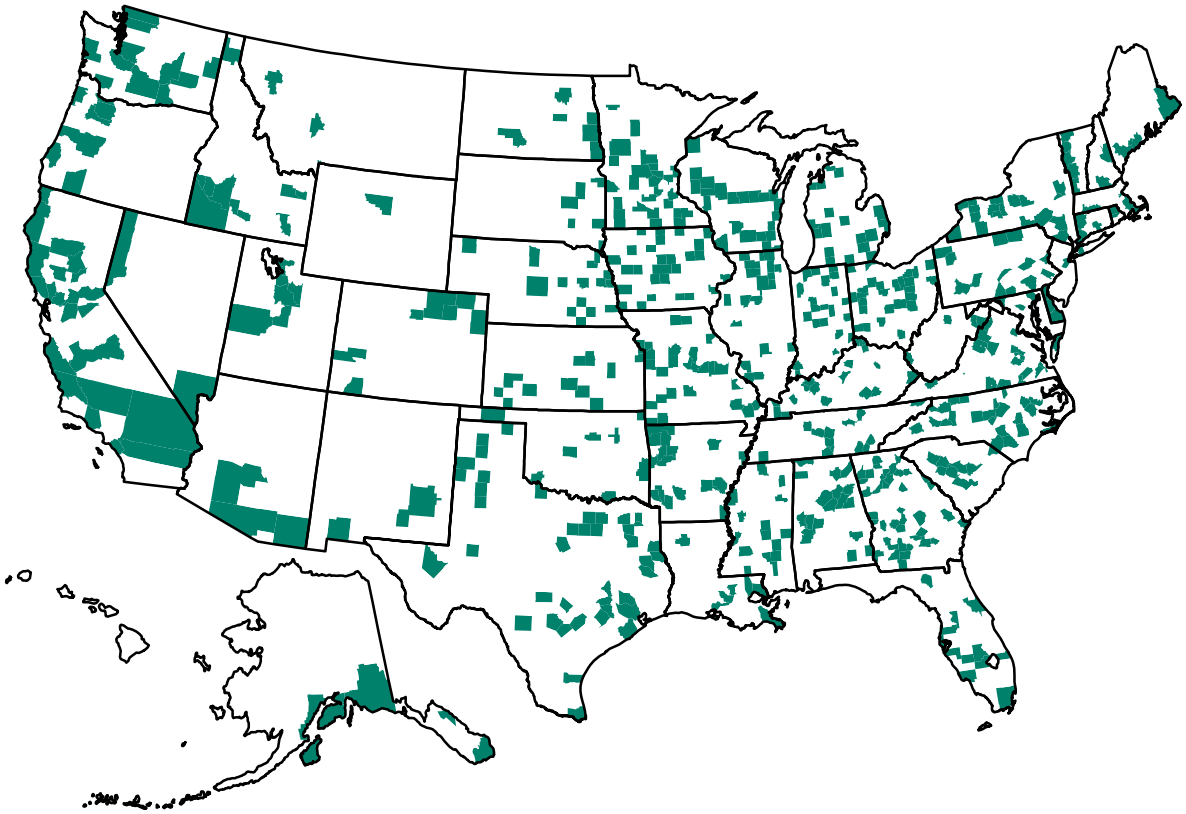
Employment gains were limited to relatively few nonmetro counties. Only 357 of 2,310 nonmetro counties gained 50 or more food processing jobs during 1991-96. Across the 357 nonmetro job-gaining counties, the average gain in food processing jobs was about 291 jobs per county. The job-gaining counties were scattered geographically across 47 States, but were predominantly in Midwestern and Southern States (fig. 3). However, most nonmetro counties did not gain food processing jobs. Food processing employment fell by at least 50 jobs in 232 nonmetro counties and was stable in the remaining 1,720 nonmetro counties during 1991-96.

Food manufacturing and other value-added activities can provide only modest growth in jobs for rural America. Food manufacturing provides only 1.7 percent of all nonmetro jobs. Even if all of the roughly 1 million food manufacturing jobs in metro areas were suddenly moved to nonmetro counties, total nonmetro employment would rise by only 4 percent. Food retail and marketing are the largest and fastest agriculturally related sectors (see "Farm Employment Losses Outstrip Job Gains in Farm-Related Industries in Some Nonmetro Areas" in this issue), but businesses in these sectors usually choose urban locations to gain access to consumers.

Figure 3

Nonmetro counties that gained at least 50 jobs in food manufacturing, 1991-96

Gains in food manufacturing jobs were geographically scattered across the country



Source: ERS analysis of U.S. Department of Commerce, *County Business Patterns* data.

Agricultural and Manufacturing Employment Expected To Decline

Nationally, farming and most food manufacturing industries are not expected to create many jobs. The Bureau of Labor Statistics (BLS) projects a decrease in agricultural employment of 0.1 percent per year between 1998 and 2008 (table 3). BLS projects falling employment in most types of food manufacturing, textiles, and apparel industries. The one bright spot is meat products manufacturing employment, which is projected to grow 1.4 percent annually. In goods-producing industries, like agriculture and manufacturing, competitive pressures are inducing businesses to cut per unit costs by raising worker productivity (output per worker). This means employment will be stagnant or declining in all but the most rapidly growing industries. Thus, even though output is expected to grow at a healthy rate, employment is expected to grow slowly or decline. For example, BLS projects annual growth in manufacturing output of 3.4 percent, but it projects no change in manufacturing employment between 1998 and 2008. Projected output growth exceeds projected job growth for nearly all goods-producing industries shown in table 3.

During the coming decade, jobs are projected to grow fastest in service-producing industries, including transportation, communications, public utilities; wholesale and retail trade; finance, insurance, and real estate; and personal, business, and health services. Service-

Table 3

Projected employment and output growth by industry, 1998-2008

Service industry employment is projected to grow the fastest

Industry	Employment growth	Output growth
	Percent	
Goods-producing industries:	0.1	3.0
Agriculture	-.1	1.4
Mining	-2.1	1.2
Construction	.9	1.3
Manufacturing	.0	3.4
Food and kindred products manufacturing	.2	1.2
Meat products	1.4	1.7
Dairy products	-1.2	.6
Preserved fruits and vegetables	-.6	.9
Grain mill products, fats and oils	.1	1.5
Bakery products	-.5	-.1
Sugar and confectionery products	-.4	.6
Beverages	-1.0	1.5
Miscellaneous foods and kindred	1.0	.9
Tobacco products	-3.1	1.0
Textile mill products	-1.7	1.2
Apparel	-2.6	.3
Service-producing industries:	1.8	3.2
Transportation, communications, and utilities	1.3	3.4
Wholesale trade	.7	3.7
Retail trade	1.3	2.7
Eating and drinking places	1.6	1.6
Finance, insurance, and real estate	1.2	3.0
Services	2.8	3.9
Government	.9	1.3

Note: Table shows projected annual growth rates. Output growth is in constant 1992 dollars.
Source: Allison Thomson, "Industry Output and Employment Projects to 2008," *Monthly Labor Review*, November 1999, pp. 33-50.

producing sector jobs are projected to grow 1.8 percent per year, and BLS expects these industries to account for nearly all of U.S. job growth between 1998 and 2008.

Can Rural Communities Participate in the Service Economy?

Many rural areas are participating in the service economy, especially those enjoying the spillover effects of prosperity in urban areas and amenity-rich areas that attract retirees, telecommuters, vacationers, and others. Between 1991 and 1996, the services sector was the largest source of new jobs in nonmetro counties, creating about one-third of new nonmetro jobs (fig. 4). Retail trade accounted for another 20 percent of job growth. In metro counties, the services sector created half of all new jobs between 1991 and 1996. By comparison, nonmetro counties were more reliant on manufacturing and government (State and local) for new jobs. These two sectors accounted for a combined 17 percent of nonmetro job growth, compared with less than 3 percent for metro counties. The increasing service-orientation of the U.S. economy is troubling for rural areas that rely on farming, food processing, and other manufacturing for economic development. Retail; finance, insurance and real estate; construction; transportation; wholesale trade; and agricultural services (mostly landscaping and lawn service jobs) shares of job growth were similar in metro and nonmetro counties.

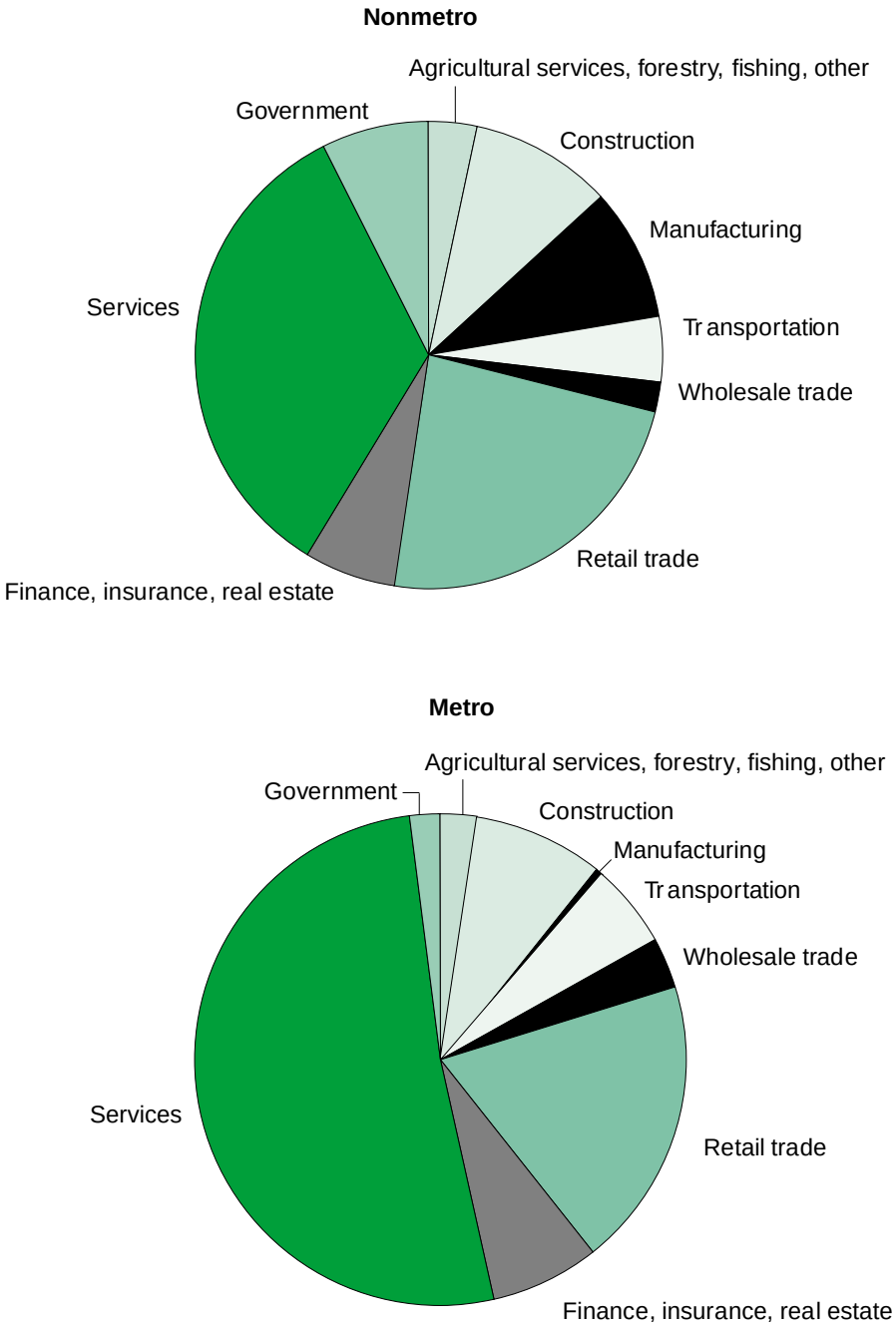
For many rural communities, the prospects for participating in the service economy seem less promising because service and trade industries have a greater tendency than other activities to “agglomerate” in urban places. They tend to concentrate in cities where they have access to large populations of consumers, transportation nodes, related industries and business service firms. The retail and services sectors account for 49 percent of metro jobs compared with only 41 percent for nonmetro counties. Geographic concentration of retail and service activity is especially true in a wide swath of the Great Plains and other sparsely populated areas where farming is still the chief rural economic activity (see “Economic Growth in Farming Areas Lags the Rest of Rural America” in this issue). In these regions, many smaller communities are no longer viable as retail and service centers. With larger farms, nearly universal access to automobiles, and pressure on retailers and service providers to exploit economies of scale, scattered cities and large towns in farming-dependent regions are becoming islands of commerce surrounded by a sea of sparsely populated farming areas. Remoteness seems to be the largest hindrance to development in these regions. Counties that reduced their farming dependency during the 1990’s tended to be on the fringes of the farming-dependent region.

Another problem associated with growth of service industries is that service jobs tend to have low skill requirements and low pay, especially those in food and personal services that small communities are most likely to retain. In contrast, rural jobs lost in manufacturing, mining, and farming tend to pay well. More highly paid service jobs in information, business and health services are among the most likely activities to locate in urban areas. Many highly educated professionals who fill these jobs prefer not to live in areas that lack natural amenities and/or good primary and secondary education.

Consumer Orientation Leads to Development

The increasing consumer orientation of the service economy holds lessons for planners and policymakers. Contracting and supply chain arrangements have increased their prevalence in recent years partly because consumers are demanding food products with specific attributes. In many cases, consumers are demanding less tangible attributes. For example, the method by which a product was produced (organically or without genetic modification) is becoming an important attribute. Many consumers seem to be willing to pay a premium for these attributes. Businesses and communities have taken advantage of this to create brands associated with their particular region, production practice, or some other attribute that can command a premium price. Many farms have broadened the scope of their business to offer entertainment and recreation in the form of agricultural tourism, theme-oriented farm visits, paid fishing and hunting access, and other services. Advances in information technology also make it possible for businesses in remote places

Figure 4
Employment growth by sector, nonmetro and metro counties, 1991-96
Most job growth was in service and retail trade industries during the 1990's



Source: ERS analyis of Bureau of Economic Analysis data.

to get in touch with consumers and sell directly to them. In today's service-oriented economy, it is this type of consumer-savvy search for new market niches that is likely to lead to development. *[Fred Gale, 202-694-5349, fgale@ers.usda.gov; Maureen Kilkenny, 515-294-6259, kilkenny@iastate.edu]*