I am pleased to be with you this morning to share a demographer’s perspective on the characteristics and dynamics of the workforce in the Food and Beverage Manufacturing industries. Thank you to NYATEP, the Workforce Development Institute and Cornell Cooperative Extension for organizing and planning this event, and to Onondaga Community College for hosting us. I am providing a statewide overview of the workforce in New York State—from the bakers and candy makers in New York City to the juice processors and yogurt makers in Upstate New York. This is the “proverbial” view from 10,000 feet. Following this conference and gaining from what we learn today, our team will be assembling a data book with workforce information by economic development region.

My presentation draws upon data produced by my colleagues in the New York State Department of Labor, the U.S. Bureau of Labor Statistics, and the U.S. Census Bureau and I owe them a debt of gratitude. A data analyst is not worth much without data to analyze. Data that are of high quality and timely.
In my presentation I will be looking at information that helps to portray where we are today, the path we’ve traveled in the last decade and a half, and look ahead to where we’ll likely be in 2020.

I will present information on the number of jobs; characteristics of workers; where those workers come from; and trends in the supply of workers in general—the workforce from which employers in Food and Beverage Manufacturing are drawing their employees. The workforce includes those directly engaged in the processing of food and beverages as well others in the sector who play supporting roles and are in related positions.
This is a graph depicting the annual average number of jobs in New York State in the Food and Beverage Manufacturing Industries. This line represents 60,000 jobs. Each column represents the average number of jobs during that year. The first column on the left is for the year 2000, while the last column on the right is the preliminary estimate for 2014. The low-point in employment shown in this graph is for 2009 during the recent Great Recession. You can see that employment in Food and Beverage Manufacturing has returned to pre-recession levels and now exceeds the previous peak in 2007. **AND** the number of jobs is approaching the previous high levels of employment in 2000 and 2001.

Annual Averages even out seasonal fluctuations that occur over the course of a year. A review of the monthly data reveals a turbulent labor market with a great deal of seasonal fluctuations. The hiring and training tasks are far more challenging that what this picture portrays.

**Source:** New York State Department of Labor, Quarterly Census of Employment and Wages, developed through a cooperative program between the State of New York and the U. S. Bureau of Labor Statistics.
In this graph I have set up an index for Food & Beverage Manufacturing and all other Manufacturing industries excluding Food & Beverage that is based on employment in the year 2000. The trend since 2000 in all other manufacturing—represented by the Blue line—has been downward to 2010 and flattened out since at approximately 60 percent of the level in 2000. There has been no rebound.

Employment in Food & Manufacturing also declined since 2000 but at a far slower rate than all other manufacturing, bottoming out in 2009, and then a robust rebound since and coming close by 2014 to the level in 2000.

Source: New York State Department of Labor, Quarterly Census of Employment and Wages, developed through a cooperative program between the State of New York and the U. S. Bureau of Labor Statistics.
The New York State Department of Labor prepared projections of employment for all sectors of the economy between 2012 and 2022. In this graph I have used their projections to extend the historical series, 2000 to 2014, to the year 2022. Over the next 7 years, the Department of Labor projects that the Food & Beverage Manufacturing sectors will continue to grow, adding over 4,500 additional jobs. Finding, training and hiring the workers to fill those positions is in large part what this conference is about.

Who are the workers currently employed in Food & Beverage Manufacturing? Associated with these data on JOBS are workers with characteristics of their own. Knowing who they are should be helpful in developing the workforce that is needed today and tomorrow.

Source: New York State Department of Labor, Quarterly Census of Employment and Wages, developed through a cooperative program between the State of New York and the U. S. Bureau of Labor Statistics.
New York State Department of Labor, Division of Research and Statistics, Long-Term Industry Employment Projections
Here is a composite picture of the average food and beverage manufacturing employee.

They are:
Male;
43 years old;
with a High School diploma and no additional years of education;
They were born in New York State
And the most frequent occupation is Baker

The average worker exists, but there is far more diversity in this workforce than is captured by the average.

Source: U.S. Census Bureau, Quarterly Workforce Indicators
36% of the workforce are females, which is greater than the 31% in all manufacturing

Source: U.S. Census Bureau, Quarterly Workforce Indicators
There are workers across a wide range of ages, with the most frequent being aged 45-54 years old representing 1-out-of-4.

2/3rds of the workers are in the prime working age range of 25 to 54 years of age.

Compared with workers in all manufacturing industries the Food & Beverage industries have a substantially greater proportion of workers under the age of 35.

Source: U.S. Census Bureau, Quarterly Workforce Indicators
The racial composition of the workforce is slightly more Black than all Manufacturing.

Source: U.S. Census Bureau, Quarterly Workforce Indicators
And more Hispanic

Source: U.S. Census Bureau, Quarterly Workforce Indicators
The information on educational attainment of workers aged 25+ shows that the Food & Beverage Workforce differs from All of Manufacturing in that a lower proportion have a Bachelor’s degree or advanced degree, and a higher proportion have less than a High School education.

The education data do not gauge post-secondary technical training or on-the-job training and apprenticeships—which we’ll hear more about. These data do not distinguish between a person who flunked out of their freshman year of college and someone who has a 2-year technical degree. There clearly is a need for more detailed data to better plan for workforce development. Such efforts are being made and others here likely have more insight regarding this.

Source: U.S. Census Bureau, Quarterly Workforce Indicators
We’ve been moving towards the pipeline for workers in Food & Beverage Manufacturing and volatility of the workforce. In this graph I am comparing the number of New Hires to Stable Workers in Food & Beverage Manufacturing with the proportion in All of Manufacturing.

- New Hires are workers who have been hired and did not work for the employer during the previous year. This distinguishes New Hires from those who were on lay-off status and have been Recalled.
- Stable Workers are those workers who have been with the Employer for at least a year.

It is tempting that think that New Hires + Stable Workers = Total Workers. They don’t because of the dynamic nature of New Hires who may only remain employed for less than a full quarter. Therefore the number of New Hires + Stable Workers is greater than Total Workers.

For every 10 Stable Workers over the course of a year, there have been almost 6 New Hires in Food & Beverage Manufacturing. Compared to 3.4 to 10 in All Manufacturing. The turnover of new employees in Food & Beverage Manufacturing is substantially greater than in Manufacturing in general.

Source: U.S. Census Bureau, Quarterly Workforce Indicators
Foreign Born persons are an important source of workers for Food & Beverage Manufacturing. 7 out of 10 workers are native born and 3 of 10 were born abroad.

Of the native born over half were born in New York State. The next most frequent birthplace is Puerto Rico, who are US Citizens by birth and included in the 7 of 10 native born displayed in the previous slide. The border states of Pennsylvania and New Jersey come next with less than 2% of the workers, followed by California and Florida--#1 and #3 largest states also with robust Food and Beverage Manufacturing economies.

Recall that 3 out of 10 workers in Food and Beverage Manufacturing are foreign born. Mexico is the place of birth for most of the Foreign born. The Caribbean, Central and South America are well represented. China is a major contributor and the only country outside the Western Hemisphere.

How many speak Spanish? 21,642 of 34,364 who speak another language at home speak Spanish, that is 63% 2/3rds of those

## Occupations in F&B Manufacturing

- Baker
- Truck Driver
- Packaging and Filling Machine Operators and Tender
- Laborers and Freight, Stock, and Material Movers, Hand
- Packers and Packagers, Hand
- Inspectors, Testers, Sorters, Samplers, and Weighers
- First-Line Supervisors of Production and Operating Workers
- Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders
- Food Batchmakers
- Food Cooking Machine Operators and Tenders

Almost half the New Hires are females yet fewer than 2 out of 10 Stable Workers are females

Source: U.S. Census Bureau, Quarterly Workforce Indicators
Younger workers under the age of 35 are far more common among the New Hires, while older workers over 45 years of age are approximately half the stable workforce.

Source: U.S. Census Bureau, Quarterly Workforce Indicators
The differences between New Hires and Stable Workers is less than in the previous characteristics. That said, Blacks are a greater proportion of the New Hires than the Stable Workers.

Source: U.S. Census Bureau, Quarterly Workforce Indicators
Very slight differences for Hispanic workers.

Source: U.S. Census Bureau, Quarterly Workforce Indicators
...and also very small differences based on educational attainment for the New Hires and Stable Workers aged 25 and older.

Source: U.S. Census Bureau, Quarterly Workforce Indicators
Population – Persons aged 16+ who are not in the military, and not in an institution such as a prison, mental hospital, or nursing home. This is the Civilian Non-Institutional Population aged 16+

Labor Force - comprises persons are employed—full and part-time—and persons who are actively seeking employment.

Labor Force Participation Rate – is the proportion of the Population who are in the Labor Force.

To project the size of the Labor Force in the future, requires that we project the Population and the Labor Force Participation Rate. This is best done by breaking the population into cohorts by Age and Sex.
Here is the Labor Force Participation Rate for Females and Males by Age Group, based on the U.S. Census Bureau’s American Community Survey and responses gathered over the period January 2009 through December 2013.

Except in the Age Group 16 to 24, Males had higher participation rates than females. Note that the prime working ages are 25 to 34, 35 to 44, and 45 to 54. Then as the population ages the labor force participation rate declines for males and females.

In this slide I combine males and females and compare Labor Force Participation Rates by Age Group between 2000—data from the long form of the decennial census—and the 2009-2013 period and data from the American Community Survey. The data are comparable although there were important differences in methods of collection.

The Bureau of Labor Statistics reported that nationally the Labor Force Participation rates declined between 2000 and 2010, yet for these data the rates increased except for the youngest workers. In the midst of a recession higher proportions of youth enroll in post-secondary education.

A third source, the Census Bureau’s Current Population Survey, processed by the New York State Department of Labor reported a slight overall decline in the Labor Force Participation Rate between 2000 and 2010.

Which trend should we go with for projections of the 2020 Workforce—that is, the Total Supply of Workers from which all employers will be hiring.

For today’s presentation, I chose to return to the Labor Force Participation Rates reported in 2000. These are likely to be higher than other forecasts and will produce a larger potential Labor Force.

Source: Program on Applied Demographics, Cornell University
Turning to the Population component of the projection of future Labor Force, here is a graph representing New York State’s population in 2010—the most recent census of population.

The Male population is represented by the Blue bars on the left hand side and Females by the Gold bars on the right hand side. The population is further broken out by 5-year age groups with the youngest at the bottom and the oldest at the top.

Baby Boomers born 1946 to 1963
   1990: Aged 27 to 44
   2000: Aged 37 to 54
   2010: Aged 47 to 64
   2020: Aged 57 to 74

Source: U.S. Census Bureau, 2010 Census of Population and Housing, Summary File 1. Program on Applied Demographics, Cornell University
Program on Applied Demographics, Cornell University
Source: U.S. Census Bureau, 2000 Census of Population and Housing, Summary File 1. Program on Applied Demographics, Cornell University
Source: U.S. Census Bureau, 2010 Census of Population and Housing, Summary File 1. Program on Applied Demographics, Cornell University
Source: Program on Applied Demographics, Cornell University
The workforce in New York State in 2020 will be older and smaller than in previous periods. This will require a coordinated effort to more effectively utilize this precious resource.

Source: Program on Applied Demographics, Cornell University
Conclusions:

- More than 1-out-of-8 jobs in Manufacturing are in Food and Beverage.
- The number of jobs in Food and Beverage has recovered to pre-Recession levels and is projected to increase over 4,500 additional jobs by 2022.
- Compared to all of manufacturing the workforce is younger, with a higher proportion of African Americans and Latinos.
- The workforce in Food and Beverage has a much higher turnover rate than manufacturing in general.
- The general workforce in New York State will be smaller and older by 2020 due to aging in the general population and lower rates of labor force participation by older persons, putting a premium on workforce development to meet the growing demand for workers.
Program on Applied Demographics
http://pad.human.cornell.edu
New York Counties Data

Maps
An interactive map with selected County statistics

Projections
Population size and characteristics, projected until 2035

ACS data
- Latest ACS data profiles
  The latest information from the American Community Survey (2009-2013 5-year estimates)
- County-to-County migration
- Migration data by different characteristics based on data from the ACS

Recent trends
Data from select demographic and economic annual time series

Historic trends
Data from the latest decennial Census, compared with data from past censuses
Downloads

Projection data
Download Excel workbook
This Excel workbook contains data for all Counties and the state by age and sex for each of the projected years.

Methodology description
Download PDF
This report describes the methodologies used to estimate the historic rates and how the rates are being used in the projections.

Assumptions
Download Excel workbook
The Excel workbook contains the assumed rates upon which the current set of projections are based. There are worksheets with estimates of the historic rates and there are two worksheets that allow for deviations from historic trends.
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