

ACS Webinars™



We will start momentarily at 2pm ET



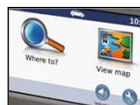
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Upcoming ACS Webinars™

[www.acswebinars.org/events](http://www.acswebinars.org/events)



Tuesday, March 1, 2011

### Planning Your Job Search, Resume Writing, Interviewing Skills

A four-part ACS Webinar series to help you maximize your job-search effort.



Thursday, March 3, 2011

### Valuable Resources for Science and Engineering Consultants

John Newport, Partner at Chemventive LLC and ChemInnoLab LLC.

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## Have Questions?



Use the Questions Box!



Or tweet us using #acswebinars



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## ACS WEBINARS™ February 24, 2011



### *Employment (and Un-employment) Trends in the Chemical and Pharma Industries*



Roger Moncarz,  
BLS



Brian Roberts,  
BLS



Gareth Edwards,  
ACS



Moderator:  
David Harwell,  
ACS Careers


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American Chemical Society



## ACS Chemists and the Chemical Workforce

A look at employment (and unemployment) of chemists by several measures

Gareth Edwards, Research Associate,  
American Chemical Society, Department of Member Research

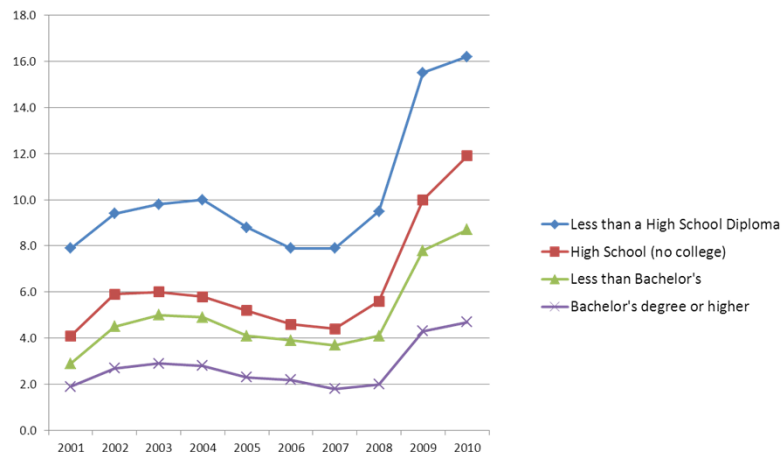


## Who is affected the most?

- The higher the education level, the lower the unemployment.
- High school graduates and below have suffered the brunt of the recession.
- People with bachelor's degrees and higher have been relatively "insulated" from experiencing the full effects of the recession.

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## Unemployment by Educational Attainment



Source: BLS Table A-4. Employment status of the civilian population 25 years and over by educational attainment (not seasonally adjusted)

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## Chemistry is a Learned Profession



- The stratified nature of unemployment data has led some to refer to this as a “blue-collar” recession.
- Chemists are highly educated and have always had lower unemployment than the general US workforce.
- Over 63% of ACS chemists have a PhD degree and over 99.7% have a bachelor’s degree or higher.

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## How Unemployment is Measured



- People with jobs are *employed*.
- People who are jobless, looking for jobs, and available for work are *unemployed*.
- People who are neither employed nor unemployed are *not in the labor force*.

Source: [http://www.bls.gov/cps/cps\\_htgm.htm](http://www.bls.gov/cps/cps_htgm.htm)

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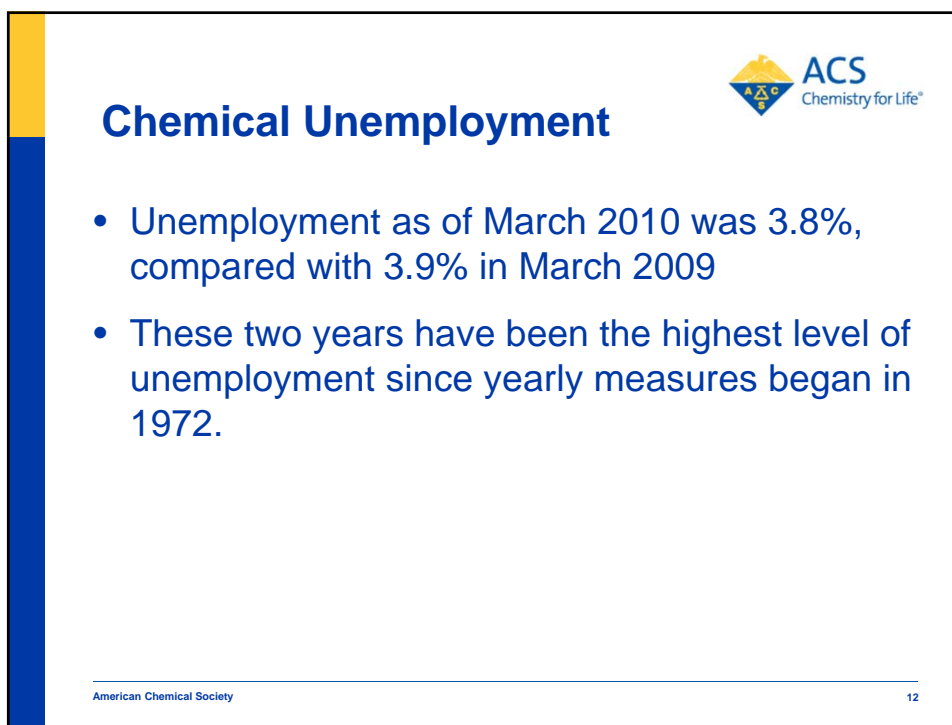
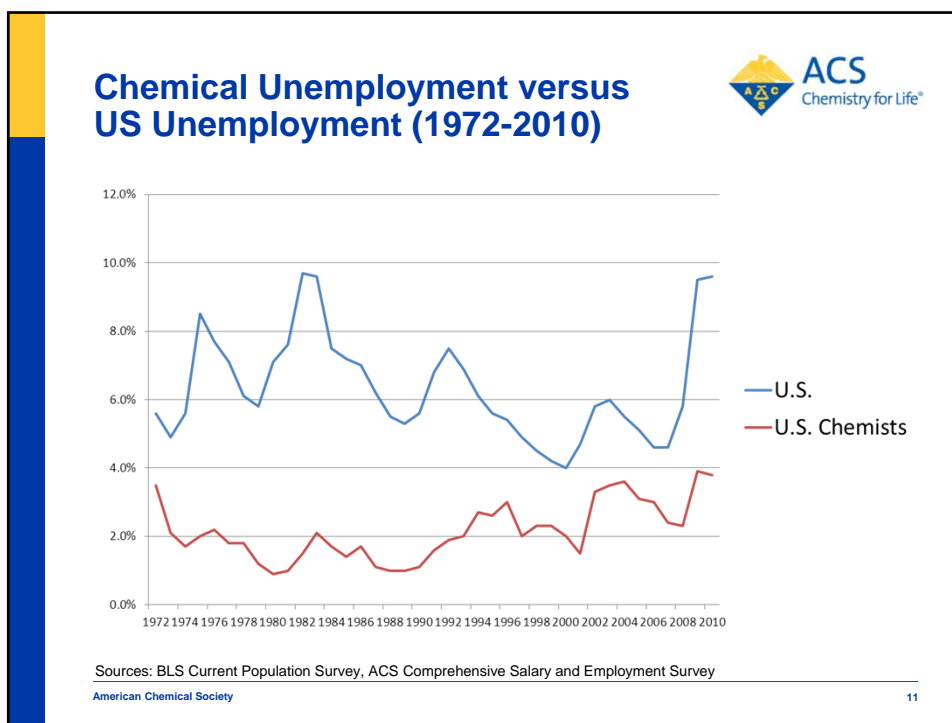
## ACS Data Collection



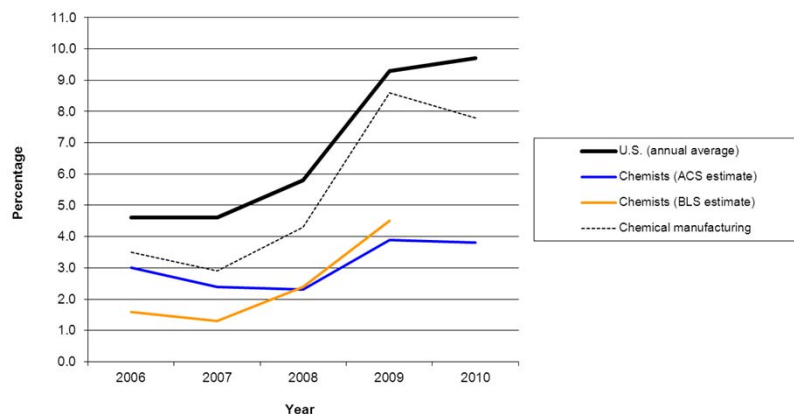
- An employment survey is sent to domestic regular ACS members under 70 who are not retired, not student, and not emeritus.
- Last survey conducted in March to July of 2010.
- Measures education level, base compensation, level of employment, total income, and work specialization.

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## Unemployment is Not Evenly Distributed



SOURCE: U.S. Bureau of Labor Statistics Current Population Survey and ACS Salary and Employment Surveys

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## Underemployment and Barely Attached Workers



- Of those who were unemployed, the mean length was 11 months (the median, 9 months).
- Chemists may be taking positions below their qualifications to gain employment (underemployed).
- The unemployment rate has stabilized from people “dropping out” of the workforce combined with people finding underemployment.

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## Summary

- Unemployment seems to have stabilized for the moment, but full recovery may take much longer.
- New graduates in chemistry are experiencing the worst unemployment of any cohort.
  - 9.4% in 2008, and 15.9% in 2009
- The loss of jobs may be a permanent adjustment without the typical recovery of other recessions.



## Contact Information

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Further Information

[www.acs.org/salary](http://www.acs.org/salary)

# BLS Data on Chemistry Occupations

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February 24, 2011

**Roger Moncarz**  
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**Economist**  
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[www.bls.gov](http://www.bls.gov)

## Overview

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- Background information
- Employment data
- Resources for additional information



## Employment Projections Background

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- 10 year projections made every two years
- 2008-2018 projections cover over 700 occupations and 200 industries
- Projections are used to produce the *Occupational Outlook Handbook*, which has been published for over 60 years



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## BLS Data

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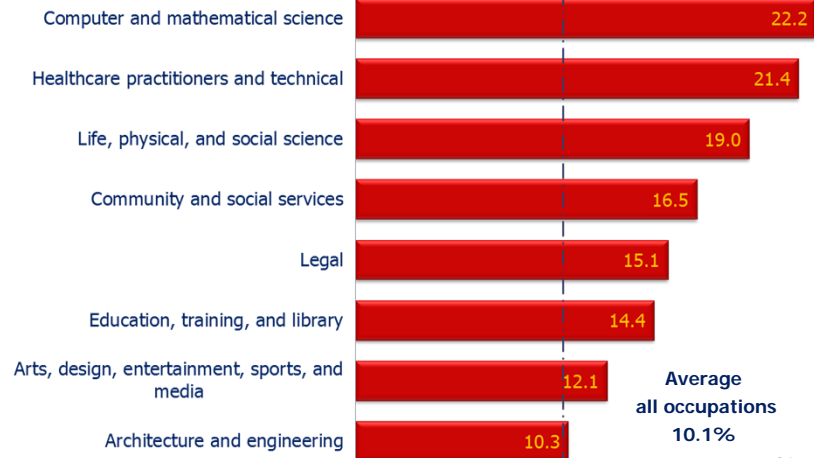
Employment data for Chemistry  
occupations



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## Percent change in employment in professional and related occupations

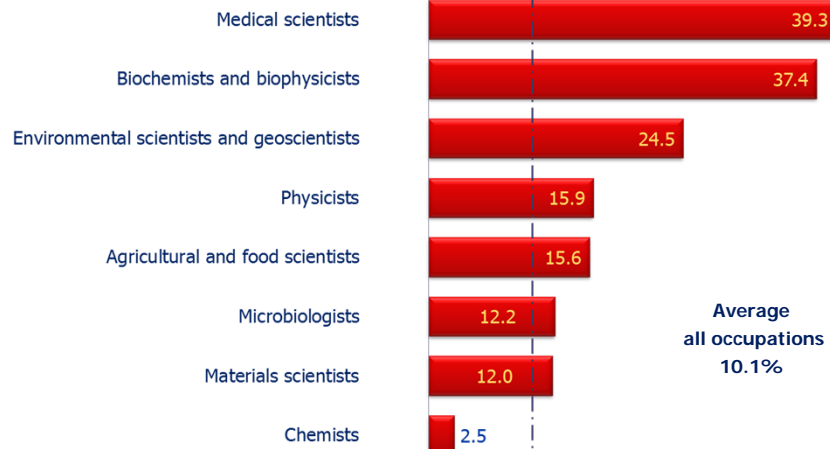
Percent change, projected 2008-18



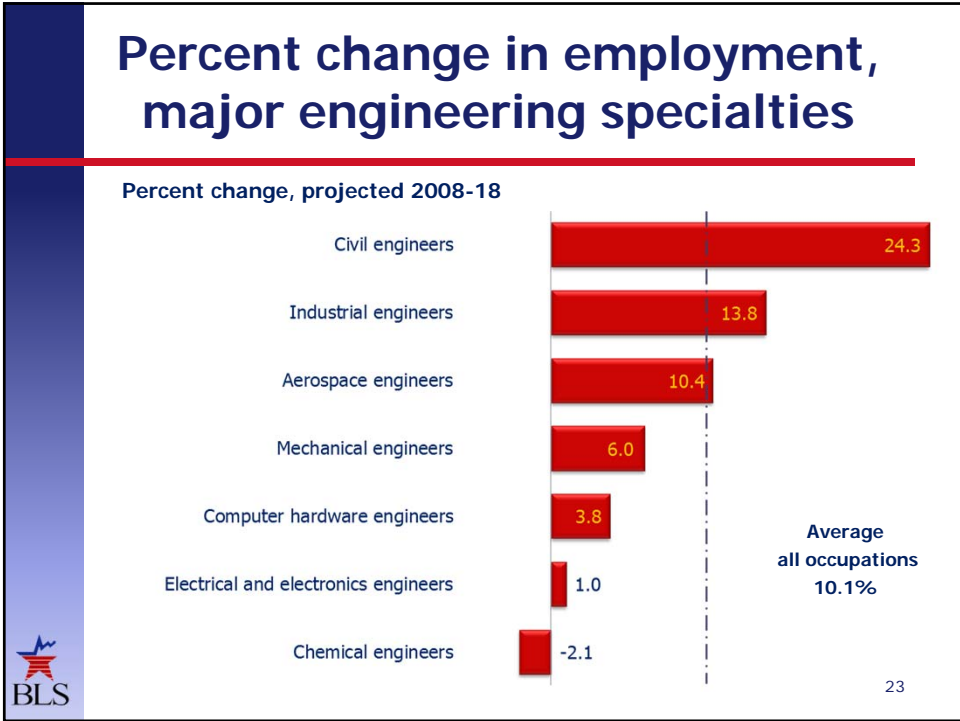
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## Percent change in employment, major science specialties

Percent change, projected 2008-18



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## Detailed Projections for Chemical Manufacturing

Industry	2008 Employment	2008-18 Projected Growth Rate
Total, all chemical manufacturing	849,800	-6.7%
Pharmaceuticals	289,800	6.1%
Basic chemicals	152,100	-34.3%
Soap, cleaning compound, and toilet preparation	108,200	-6.6%
All other chemical manufacturing	299,700	-23.9%

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## Detailed Projections for Chemical Engineers

Industry	2008 Employment	2008-18 Projected Growth Rate
Total, all chemical engineers	31,700	-2.1%
Chemical manufacturing	9,700	-16.4%
Engineering services	4,700	12.8%
Scientific research	4,000	12.8%



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## Detailed Projections for Chemists

Industry	2008 Employment	2008-18 Projected Growth Rate
Total, all chemists	84,300	2.5%
Chemical manufacturing	29,100	-6.0%
Scientific research	14,300	.5%
Government	10,500	8.0%
Testing laboratories	8,300	10.1%



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## Detailed Projections for Materials Scientists

Industry	2008 Employment	2008-18 Projected Growth Rate
Total, all materials scientists	9,700	12.0%
Chemical manufacturing	2,200	-0.5%
Scientific research	2,600	26.5%
Management of companies	1,600	12.4%
Educational services	500	20.8%



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## Detailed Projections for Biochemists and Biophysicists

Industry	2008 Employment	2008-18 Projected Growth Rate
Total, all biochemists and biophysicists	23,200	37.4%
Scientific research	10,100	50.5%
Pharmaceutical manufacturing	6,700	22.2%
Educational services	1,900	34.7%



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# Employment Outlook: 2008-18

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## Resources for Additional Information



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# BLS Data Sites

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## ■ Projections by occupation and industry:

[www.bls.gov/emp](http://www.bls.gov/emp)

▶ Chemists:

[ftp://ftp.bls.gov/pub/special.requests/ep/ind-occ.matrix/occ\\_pdf/occ\\_19-2031.pdf](ftp://ftp.bls.gov/pub/special.requests/ep/ind-occ.matrix/occ_pdf/occ_19-2031.pdf)

▶ Materials Scientists:

[ftp://ftp.bls.gov/pub/special.requests/ep/ind-occ.matrix/occ\\_pdf/occ\\_19-2032.pdf](ftp://ftp.bls.gov/pub/special.requests/ep/ind-occ.matrix/occ_pdf/occ_19-2032.pdf)

▶ Biochemists and Biophysicists:

[ftp://ftp.bls.gov/pub/special.requests/ep/ind-occ.matrix/occ\\_pdf/occ\\_19-1021.pdf](ftp://ftp.bls.gov/pub/special.requests/ep/ind-occ.matrix/occ_pdf/occ_19-1021.pdf)

▶ Chemical Engineers:

[ftp://ftp.bls.gov/pub/special.requests/ep/ind-occ.matrix/occ\\_pdf/occ\\_17-2041.pdf](ftp://ftp.bls.gov/pub/special.requests/ep/ind-occ.matrix/occ_pdf/occ_17-2041.pdf)



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## BLS Data Sites

- Current data (employment and wages):

[www.bls.gov/oes](http://www.bls.gov/oes)

- State-level Projections:

[www.projectionscentral.com](http://www.projectionscentral.com)



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## Occupational Outlook Handbook

[www.bls.gov/ooH](http://www.bls.gov/ooH)

The screenshot displays the Occupational Outlook Handbook (OOH) website for the 2010-11 Edition. The page is titled "Occupational Outlook Handbook (OOH), 2010-11 Edition" and features a navigation menu with options like "Home", "Subpart A Areas", "Data Tools & Tables", "Publications", and "Economic Releases". A search bar is located at the top right. The main content area includes a "BUREAU OF LABOR STATISTICS" header, a "SEARCH" section, and a "RELATED LINKS" section. The page also features a "Coming this Fall" announcement and a "Ways to use the Occupational Outlook Handbook sites" section with three numbered instructions: 1. To find out about a specific occupation or topic, use the search box that is on every page—enter your search term in the box. 2. To find out about many occupations, browse through listings using the Occupations links that are on the left side of each page. 3. For a listing of all occupations in alphabetical order, go to the OOH Index and select a letter. The page is designed to provide valuable assistance to individuals making decisions about their future work lives.



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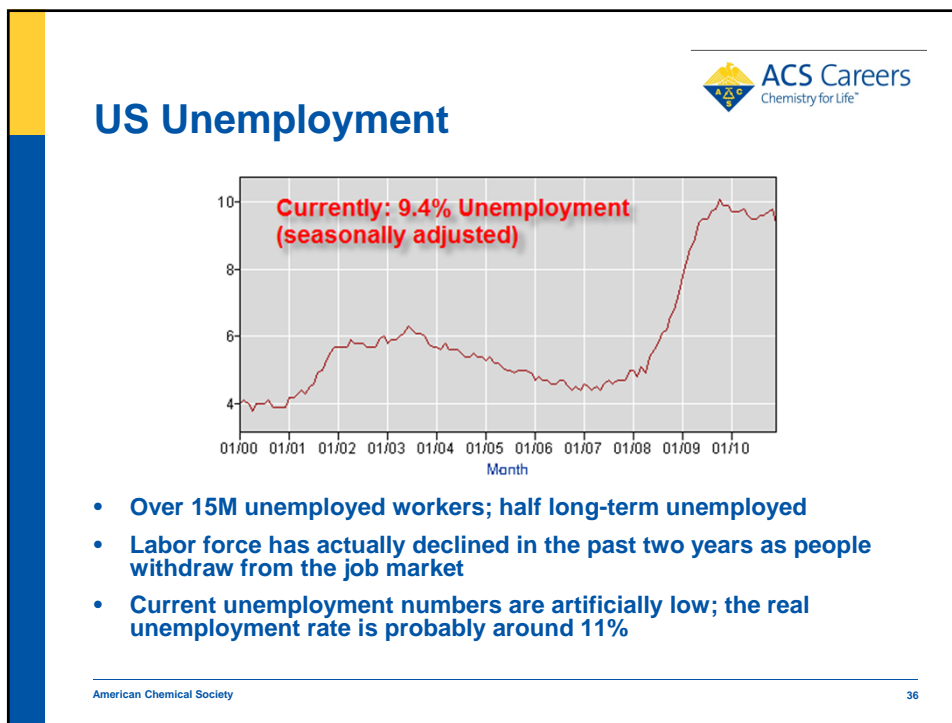
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## US Worker Surplus

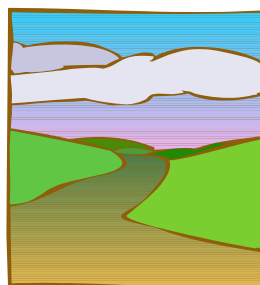


- We must add 337k jobs per month if we are to recover in three years, or 260k per month to recover in five years
- This has never happened in the history of the US, so it is very unlikely that we will come out of this problem in the next 5 years
- Projected recovery will be long term (10 years projected based on rate of job creation) with a surplus of workers for some time to come

## Resources for the Unemployed



- Employment Guides
- Job clubs
- Career Consultants
- Training Discounts
- Unemployment Dues Waiver
- Salary Information and Demographics
- Deferred ACS Insurance Premiums
- ACS Web Edition Journal Subscription Waiver



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