

BRIAN SANDOVAL  
GOVERNOR

BRIAN L. MITCHELL  
DIRECTOR



STATE OF NEVADA  
**GOVERNOR'S OFFICE OF SCIENCE, INNOVATION AND TECHNOLOGY**

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Name of Organization: Advisory Council on Science, Technology, Engineering  
and Mathematics (STEM)

Date and Time of Meeting: January 25, 2016, 2:00 PM

Place of Meeting: State Capitol Building, Annex  
Guinn Room, 2<sup>nd</sup> Floor  
101 North Carson Street  
Carson City, NV 89701

This meeting was video conferenced to the following location:

Grant Sawyer State Office Building  
555 East Washington Ave,  
Suite 5100  
Las Vegas, NV 89101

**MINUTES**

- I. Call to Order/Roll Call  
Brian Mitchell, Director, Governor's Office of Science, Innovation and  
Technology (OSIT)

Mr. Mitchell called the meeting to order at 2:00 pm.

Members Present: Mark Newburn, James Huckaby, Shelace Shoemaker,  
Gerd Poppinga, Dr. Anne Grisham, Judy Kraus, Richard Knoeppel, Kelly  
Barber, Dave Brancamp, Dr. Carl Reiber, Cory Hunt, Kristine Nelson

Excused Members: Marcus Mason, Adam Kramer, Mary Frey

Guests: Bill Anderson, Beth Wells, Dan Rudy, Susan Keema, Todd Butterworth, Camille Stegman, Jennifer Dounay-Zinth, Senator Joyce Woodhouse

Staff: Brian Mitchell, Dale Ann Luzzi, Jodi Bass, Zachary Heit

A quorum was declared.

- II. **Public Comment** (No action may be taken upon a matter raised under public comment period unless the matter itself has been specifically included on an agenda as an action item.)

Senator Joyce Woodhouse provided the following public comment.  
(Attachment A)

- III. **Welcoming Remarks and Introductions** (Information)  
Brian Mitchell, Director, OSIT

Mr. Mitchell asked the Council members to go around the rooms, north and south, and introduce themselves. Mr. Mitchell thanked the members for giving of their time to serve on the Council to further STEM education in Nevada. He also thanked everyone who had served on the previous Council. Mr. Mitchell said that the Governor and the Legislators made significant investments in education and in STEM by creating the Office of Science, Innovation and Technology (OSIT). Mr. Mitchell told the Council that OSIT is dedicating staff for the Council. The charge of the Council is to develop a statewide strategic plan, so more students study STEM developing a new workforce ready of the new Nevada. The Council will coordinate and provide uniform STEM opportunities for all Nevada students.

- IV. **STEM Advisory Council Charge and Duties, Overview of the Assembly Bill 485** (Information/Discussion)  
Brian Mitchell, Director, OSIT

Mr. Mitchell provided the Council an outline of the list of the duties from SB 345 of the 2015 Legislative Session, including changes and updates to the Council (Attachment B). Mr. Newburn commented that he thought the non-profit had already been established and asked if it was possible to carry that recommendation forward. Mr. Mitchell said that the nonprofit had been approved in the subcommittee but not by the entire Council. Mr. Brancamp told that Council that the previous STEM Council had left it still in the negotiation stage between the Department of Education and the STEM Council. The details were still being worked out when the STEM Council stopped meeting and no negotiations went forward. Ms. Kraus asked about the recognition for the schools this late in the school year. Mr. Mitchell said the intent was a calendar year not a school year.

V. Review of Council's Previous Work ([Information/Discussion](#))

Brian Mitchell, Director, OSIT

Mr. Mitchell told the Council that he had reviewed all the previous Council minutes, documents and the final report. He said the previous work done by the Council was fantastic and that this Council will be able to build on the work and make adjustments moving forward. Mr. Mitchell noted several accomplishments were a STEM recognition rubric, STEM school recognition form outlining what a program would look like and a STEM symposium. He also noted all the work that went into identifying a nonprofit corporation and the survey and responses that went out to all staff of K-12 schools. Mr. Newburn told the Council that the previous SYEM Council was in the process of working with Switch and the Brookings Institute to start to think about the alignment of P-20W education with STEM industries in the state. He said they did not get very far but it is critical moving forward to be able to deliver the right workforce to the right industries. Mr. Mitchell said this would be important as the strategic plan is written.

VI. Report on the State of the STEM Workforce in Nevada ([Information/Discussion](#))  
Bill Anderson, Chief Economist, Department of Employment, Training and Rehabilitation

Mr. Anderson presented a PowerPoint (Attachment C) that outlined for the Council where Nevada is in terms of the overall economy and labor markets. He also provided the Council with information on the STEM workforce in Nevada. He also offered assistance to the Council moving forward with reports that the Council may want or need. After hearing the general question from the Council on the various reports that are available, Mr. Anderson said he could be available for the next meeting and present reports that the Council has requested.

VII. National Perspective on STEM ([Information/Discussion](#))  
Jennifer Dounay-Zinth, Director of High School and STEM, Education Commission of the States

Ms. Dounay-Zinth, representing Education Commission of the States (ECS), reviewed for the Advisory Council a PowerPoint from the Education Commission of the States: STEM: A National Policy Perspective. The presentation highlighted STEM policy trends for states across the country and what states are doing in regards to organizing and coordinating the work, early college opportunities, scholarships and teacher recruitment scholarships. She told the Advisory Council that plans that have been put into places have not necessarily solved the STEM challenges. Some challenges that states are facing are: taking on too much, programs are not supported by adequate funding streams and inadequate state coordination of efforts. Ms. Dounay-Zinth said states are developing a cohesive

approach by connecting education to careers, strategic CTE investments with strategic STEM investments. She provided the Advisory Council with examples of what Massachusetts and Utah have done to coordinate successful STEM programs. She finished her presentation on computer science- what can states do to create pathways toward access for all students. Some things she suggested were; making computer science count, require all high schools to offer at least one computer science course and fund professional learning opportunities for teachers. Ms. Dounay-Zinth shared with the Advisory Council eight ideas to make computer science fundamental to K-12 education: define computer science, allocate funding, implement clear certification pathways, create incentives, establish dedicated computer science positions, requires that all secondary schools offer computer science, allow computer science to count as core mathematics or science requirements and allow computer science to count as a mathematics or science requirements at institutions of higher education. (Attachment D)

VIII. Overview of STEM Programs at the Nevada Department of Education (DOP)<sup>([Information/Discussion](#))</sup>

Dave Brancamp, Director, Office of Standards and Instructional Support, Nevada Department of Education

Mr. Brancamp told the Council members that as a result of the 2015 Legislative session and some new grant opportunities, there is potential for more funding for STEM. He mentioned the Career and College Readiness grant that could be looked at for STEM funding. Also the Great Teaching and Leading fund will assist with the implementation of the Next Generation Science standards into instruction. Mr. Brancamp also mentioned the Math Science Partnership grant which is changing under the new ESSA and could potentially become a STEM grant. Mr. Brancamp told the Advisory Council about the Nevada Teach program through UNR. Students who are graduating in a STEM field may also be eligible to receive their teaching credentials.

IX. Introduction and Discussion Regarding the STEM Coalition's Upcoming STEM Summit<sup>([Information/Discussion](#))</sup>

Brian Mitchell, Director, OSIT

Beth Wells, Executive Director, Nevada STEM Coalition

Mr. Mitchell thanked Ms. Wells for all her assistance and collaboration as the Council drafts a strategic plan. Ms. Wells told the Council that the Nevada STEM coalition board is planning a "STEM Summit II 2016" (Attachment E) scheduled for September 23-24, 2016 in Las Vegas. The Coalition is still in the process of raising funds for teachers to travel to Las Vegas. The last summit was held in 2012. She told the Council that the last summit helped "move the needle" in connecting people around the



state. It help to build new collaborations and generated a statewide math network, which now has its own website with connections for common core math. Ms. Wells said a report was created from the summit and it was used to draft their strategic plan. The 2016 summit will share best practices, renew, enhance and build on new collaborations while identify new partnerships from the input from stakeholders. This will create recommendations for possible with policies and practice. Ms. Wells said the information gathered at the summit will become useful to the STEM Advisory Council as draft their strategic plan. She said the summit would focus making sure that stakeholders have a strong voice. The format will be similar to the 2012 summit, with eight topics of interest, in two hour breakout sessions.

Ms. Wells said what makes this conference different is that the participants in the workshops are the ones who move the conversation.

X. Election of Chair/Vice Chair (For Possible Action)  
Brian Mitchell, Director, OSIT

After a short discussion the Council voted to have Mark Newburn and Kelly Barber as co-chairs.

XI. Discussion of Future Meeting Schedule (For Possible Action)  
Brian Mitchell, Director, OSIT

Mr. Mitchell told the Council with the changes in SB 345, the Council is required to meet, at minimum, six times a year. Two of the meetings will be in person, one meeting in the north and one in the south. Mr. Mitchell told the Council that OSIT has the budget to provide for travel reimbursement for the Council members. Mr. Mitchell told the members that they are entitled to request per diem for travel related to Council business. Any member who would like to request this reimbursement was asked to contact Mr. Mitchell to complete the necessary paperwork.

Mr. Mitchell proposed the Council meet every other month through the end of the year. Dr. Reiber suggested that once a month would be more productive and the rest of the Council agreed. Mr. Mitchell will send out a poll to get input on the best day and time for the future meetings.

XII. Opportunities for STEM Advisory Council to Learn About STEM Activities in Nevada (Information/Discussion)  
Brian Mitchell, Director, OSIT

Mr. Mitchell told the Council in reviewing the previous minutes, he liked the reoccurring agenda item for Council members to share about upcoming STEM opportunities and events. The members provided the following event information:

- Next Generation Science Standards (NGSS), February 6, 2016 at UNLV (<http://www.nevadangse.net/professional-development/snsta-conference-science-for-the-next-generation-february-6-2016/>)
- FIRST Tech Challenge is February 6, 2016, which is part of First Robotics. The regionals for FIRST Robotics are in Las Vegas, March 30, 2016 (<http://www.firstinspires.org/robotics/ftc>)
- The Southern Nevada Science Teachers Conference is February 6, 2016 (<https://www.eventbrite.com/e/snsta-region-one-annual-science-conference-tickets-19390134414>)
- Fernley STEM Council is hosting STEM festival on February 25, 2016 The largest parent participation event in Nevada. (<http://www.fernleystem.com/fernley-stem-festival.html>)
- Southern Nevada Regional Science & Engineering Fair (SNRSEF) at UNLV starting on March 31, 2016 (<https://www.unlv.edu/sciences/schools>)

The information will also be available on the OSIT website: <http://osit.nv.gov/>

### XIII. Consider Agenda Items for the Next Meeting and Develop Work Plan (For Possible Action)

Brian Mitchell, Director, OSIT

Mr. Mitchell proposed to the Council that they create subcommittees, similar to the ones the previous STEM Council had. This way the work could be subdivided and brought back to the committee as a whole. He recommended three subcommittees:

1-a subcommittee to plan and execute the three recognition events, 2-a survey subcommittee to refine, disseminate, collect the data and report back to the Council, and 3- a subcommittee to start the strategic planning process.

Mr. Mitchell said that he would be the staff person for each of the subcommittees and do any research that is needed. Mr. Mitchell said the last STEM Council had a nonprofit subcommittee but he didn't think that one is necessary since this Council has funding in the OSIT budget to carry out the recognition events. This Council needs a nonprofit to act only as a fiscal agent to assist with the implication of the plans developed by the Council and manage the money. Mr. Huckaby asked if a vote was needed for a new nonprofit and if the so, could the STEM Coalition do a presentation on possibly being the nonprofit? Mr. Mitchell said there needs to be a

conversation with the STEM Coalition to see if they are interested in being the nonprofit for this Council.

Dr. Grisham said that a lot of work had gone into developing the survey which was sent out and responses were received. Mr. Mitchell said that the same survey could be used again and built on the previous work. The following subcommittees were formed: Strategic Plan Subcommittee: Kris Nelson, Kelly Barber and Cory Hunt. Survey Subcommittee: Dr. Anne Grisham, James Huckaby, Cory Hunt. Recognition Subcommittee: Judy Kraus, Richard Knoeppel, Shelace Shoemaker.

Mr. Mitchell will send each subcommittee member a plan of action and suggested meeting dates and times.

Mr. Mitchell asked if there was any items that the Council would like on the next agenda in addition to a presentation from Bob Potts from GOED. Someone suggested an update on where the STEM Coalition is going. Dr. Grisham asked if the previous work (report) of the STEM Council could be sent to the Council members. Ms. Kraus asked for an updated membership list.

XIV. The next meeting date will be determined at the January 25, 2016 meeting of the Council.

The next meeting dates will be determined once the committee responses to the poll are compiled.

XV. Public Comment (No action may be taken upon a matter raised under public comment period unless the matter itself has been specifically included on an agenda as an action item.)

Beth Wells asked if it was possible to have a presentation from the Carson City and or the Fernley school districts who are doing a great job connecting industry and business with the school districts. Mr. Mitchell said that he would also like to have Washoe and Clark County school districts provide an overview of their STEM initiatives.

XVI. Adjournment

The meeting was adjourned at 4:17 PM

Attachment A

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**ADVISORY COUNCIL ON SCIENCE, TECHNOLOGY,**

**ENGINEERING AND MATHEMATICS**

**JANUARY 25, 2016**

**SENATOR JOYCE WOODHOUSE**

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Good afternoon. For the record, I am Senator Joyce Woodhouse, representing District No. 5 in Clark County.

I am here today under Public Comment to support the Advisory Council on Science, Technology, Engineering and Mathematics (STEM) and to reinforce the importance of the Council's work.

As a former teacher and administrator, education has always been my top legislative priority, and I have witnessed firsthand the evolution of efforts to promote the teaching of STEM curricula in our schools.

In that role, I was proud to sponsor Senate Bill 345 during the 2013 Session, which created the original Advisory Council on STEM Education. The first iteration of the Advisory Council met five times and began the critical work of linking STEM education in our K-12 schools with higher education and, finally, with our workforce agencies, such as the Governor's Office on Economic Development and the Department of Employment, Training and Rehabilitation. One

of the problems for this original Council was that the Legislature did not fund its meetings or work.

However, with a few years under our belts, we have begun to make some real progress with STEM coordinators in more schools, grant funding for STEM initiatives, and increasing statewide collaboration on STEM education.

I would like to take a moment to express my appreciation to the members of the initial Advisory Council on STEM Education. They, and some of you on this Council were on it, did a fabulous amount of work in a short period of time. I would also like to thank the staff of the Nevada Department of Education for all of the support they provided that Council. Thank you!

I had intended to identify the work accomplished, however, I see that you will be receiving a report on the previous work by Mr. Mitchell, so I will move on to other matters.

During the 2015 legislative session, it was clear that more could and needed to be done, so I sponsored Senate Bill 236. As we addressed the issue of STEM Education, we folded much of my bill into Assembly Bill 485. In Assembly Bill 485, the 2015 Legislature took steps to strengthen the Advisory Council and make it a permanent fixture, thereby providing continuity to the effort as the years go by.

This legislation will help strengthen the workforce linkage by transferring the Advisory Council from the Department of Education to the newly-revived and fully funded Governor's Office of Science, Innovation, and Technology. You will also hear from Mr. Mitchell the charge and duties of the STEM Advisory Council later in this meeting. Again, I would like to express my deepest appreciation to Governor Sandoval, Chief of Staff Mike Willden, and Brian Mitchell for working with me to include the aspects of my legislation that I felt so strongly about into Assembly Bill 485.

On your agenda today, you will hear about other very important measures that passed this past session, which will improve our delivery of STEM education and provide positive results and solutions to workforce development in our state.

Clearly, STEM education and its connection to workforce development has become a priority in our State and so the importance of your work on the Advisory Council cannot be overstated.

While we are making progress, challenges remain—particularly in our rural areas—in performance gaps in math and science among racial groups and the linkage between our schools, colleges, and the business community.

The statistics on the benefits of STEM education are breathtaking—STEM occupations are growing almost twice as fast as other occupations; 60 percent of U.S. employers have difficulty finding

skilled workers; and—my favorite—the average annual wage for STEM occupations is nearly double that of non-STEM jobs.

These numbers tell the story of not only the relevance of STEM education and workforce development on a national level, but also of the relevance to Nevada as we work toward attracting more technology — companies like Tesla, Switch, and Faraday—companies that will create twenty-first century jobs and provide a bright future for our students.

I could go on for hours on this topic as it is near and dear to my heart, but you have work to do. In closing, as you move forward, please let me know whether I can help in any way, and I wish you great success in your endeavors.

I truly appreciate your time this afternoon and am happy to answer any questions you may have now or in the future. Thank you.

W160668



Attachment B

#### STEM Advisory Council Charge and Duties, Overview of the AB 485

1. Develop a strategic plan for the development of educational resources in STEM to serve as a foundation for workforce development, college preparedness and economic development.
2. Develop a plan to identify and award recognition to students in Nevada who demonstrate exemplary achievement in STEM.
3. Develop a plan to identify and award recognition to 15 schools in Nevada that demonstrate exemplary performance in STEM.
4. Conduct a survey of education programs and proposed programs relating to STEM in Nevada and in other states for implementation in public schools and institutions of higher education and report to State Board and Board of Regents.
5. Apply for grants on behalf of the State relating to the development and expansion of education programs in STEM.
6. Identify a nonprofit corporation to assist in the implementation of the plans developed in 1, 2, or 3.
7. Prepare a written report which includes survey recommendations and any other recommendations concerning the instruction and curriculum in STEM before January 31 to State Board, Regents, Governor and LCB.
8. NEW: Conduct surveys for and make recommendations as necessary to GOED and GWDB.

Also NEW: Each year the Council shall:

1. Establish an event in Southern and Northern Nevada to recognize pupils in this State who demonstrate exemplary achievement in the fields of STEM. The event must be held at an institution of higher education.
2. Establish a statewide event in Carson City to recognize up to 15 schools that have demonstrated exemplary performance in STEM.
3. May accept gifts, grants, or donations from any source for use in carrying out these provisions.

Nevada Department of Education's STEM definition: STEM education focuses on active teaching and learning, centered on relevant experiences, problem solving, and critical thinking processes. STEM education emphasizes the natural interconnectedness of science, technology, engineering, and mathematics, and their connections to other disciplines to produce informed citizens that possess and apply the necessary understandings to expand Nevada's STEM capable workforce in order to compete in a global society.

Attachment C

# Nevada Labor Market Briefing: December 2015

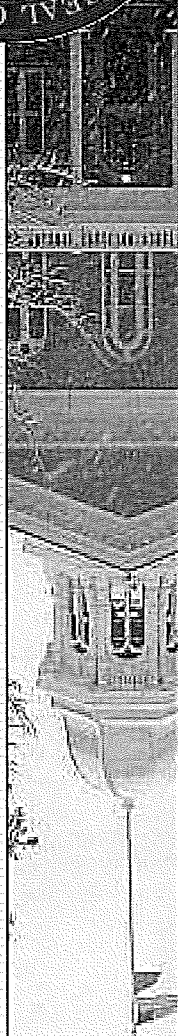
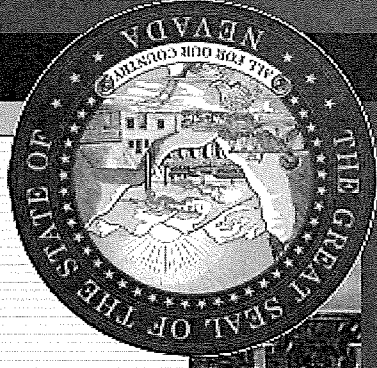
## Department of Employment, Training & Rehabilitation

Don Soderberg, Director

Dennis Perea, Deputy Director

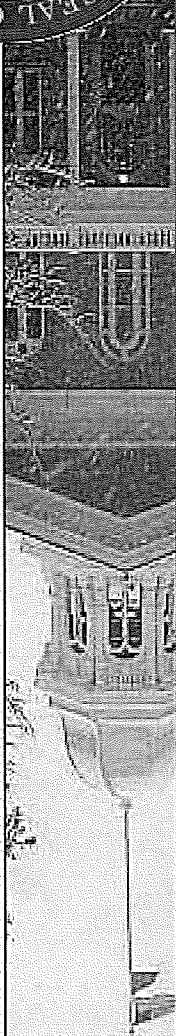
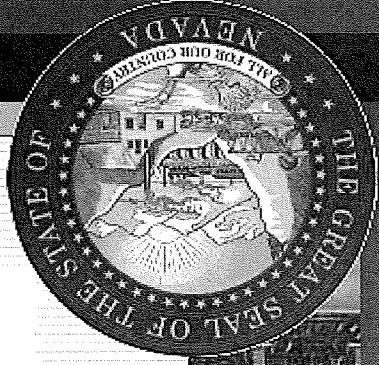
Bill Anderson, Chief Economist

Prepared by the Research and Analysis Bureau for Presentation to the  
Advisory Council on STEM



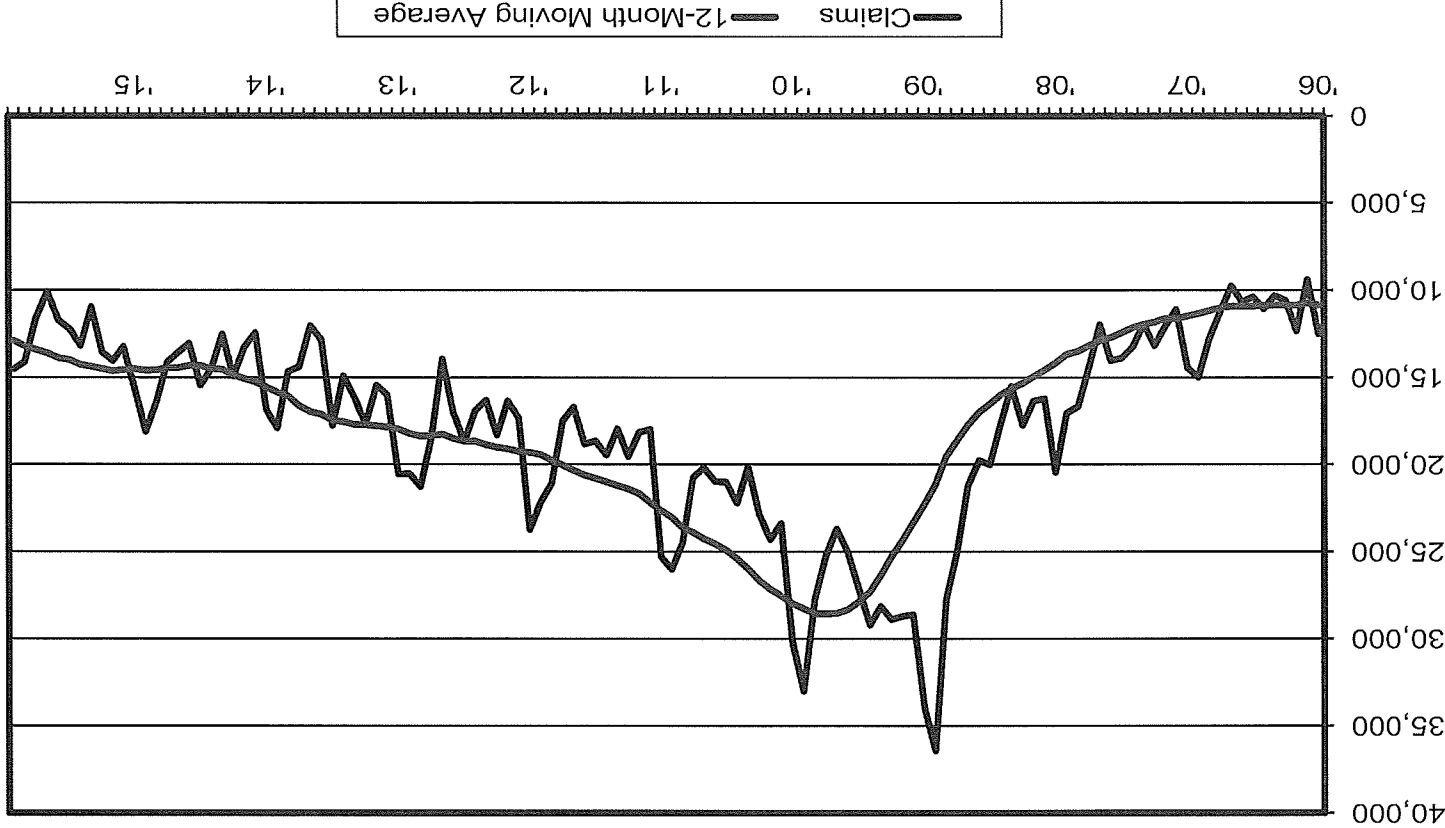
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# Initial Claims @ 12,900/Mo. in 2015, Down 11.6%; Lowest Annual Reading Since 2006

## Initial Claims for Unemployment Insurance



— Claims — 12-Month Moving Average

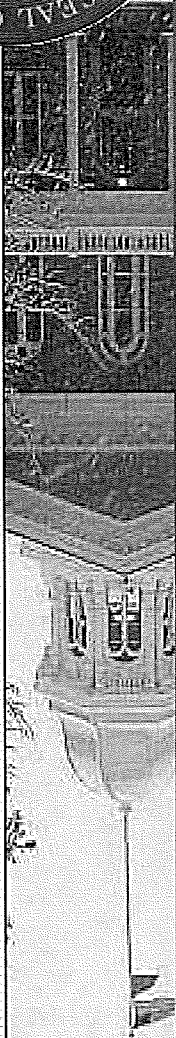
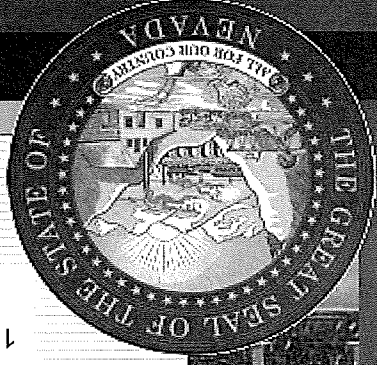
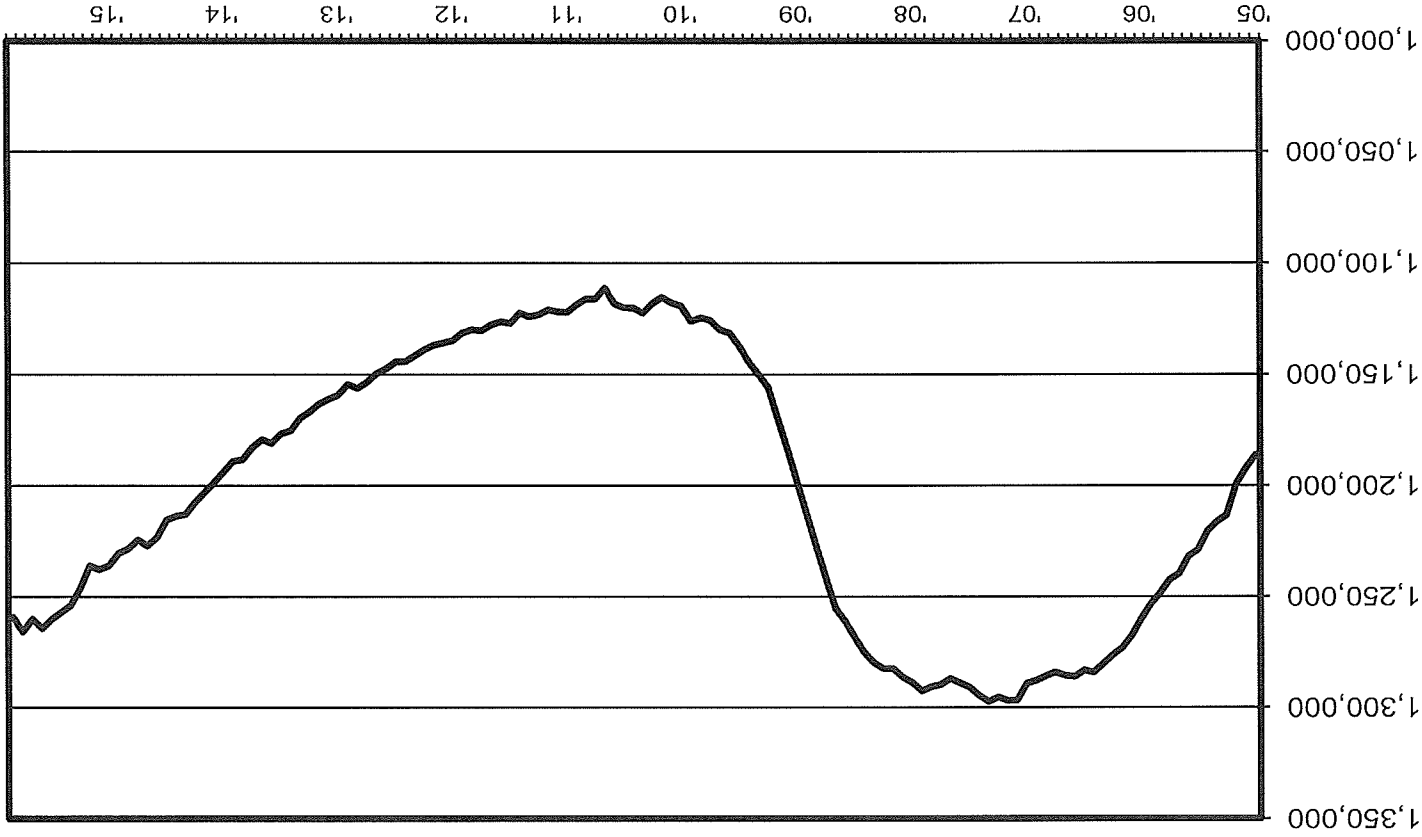
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# Underlying Trend Still Points to Positive Job Growth

## Nonfarm Jobs in Nevada (SA)



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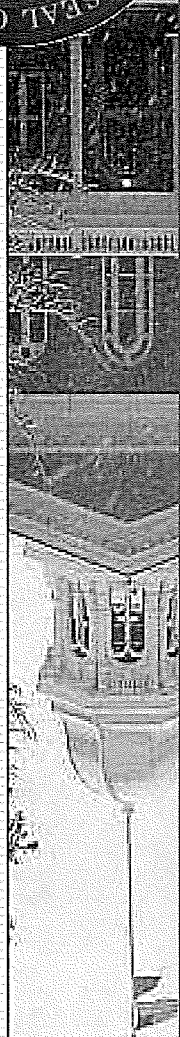
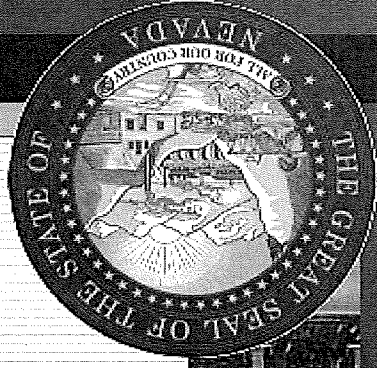




# Nearly 100K New Private Sector Jobs Over 2010-2014; 2015 Brought Nearly 40K More

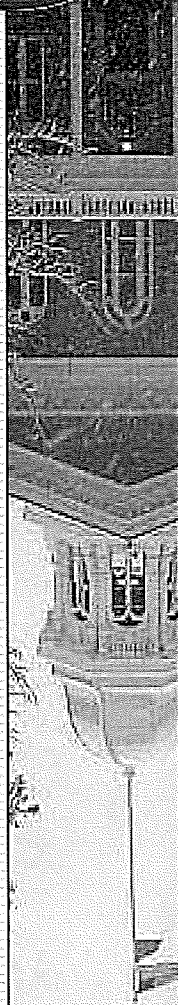
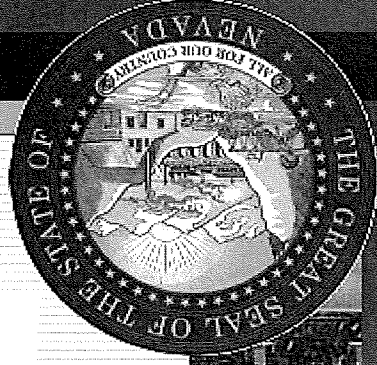
Nevada Job Growth Since 2010

| 2010 Baseline                                                                                 |                |         |
|-----------------------------------------------------------------------------------------------|----------------|---------|
| (Private+Public)                                                                              | Private Sector |         |
| 1,117,800                                                                                     | 964,000        |         |
| 2011                                                                                          |                |         |
| Calculation of 2011 Growth                                                                    |                |         |
| 1,125,700                                                                                     | 975,500        |         |
| Growth from 2010                                                                              | 11,500         |         |
| 2012                                                                                          |                |         |
| Calculation of 2012 Growth                                                                    |                |         |
| 1,144,800                                                                                     | 995,500        |         |
| Growth from 2011                                                                              | 20,000         |         |
| 2013                                                                                          |                |         |
| Calculation of 2013 Growth                                                                    |                |         |
| 1,174,300                                                                                     | 1,023,300      |         |
| Growth from 2012                                                                              | 27,800         |         |
| 2014                                                                                          |                |         |
| Calculation of 2014 Growth                                                                    |                |         |
| 1,215,300                                                                                     | 1,063,000      |         |
| Growth from 2013                                                                              | 39,700         |         |
| 2015                                                                                          |                |         |
| Calculation of 2015 Growth                                                                    |                |         |
| 1,252,800                                                                                     | 1,098,700      |         |
| Growth from 2014                                                                              | 35,700         |         |
| Total Growth Since 2010 (2011 Growth + 2012 Growth + 2013 Growth + 2014 Growth + 2015 Growth) | 134,700        | 135,000 |



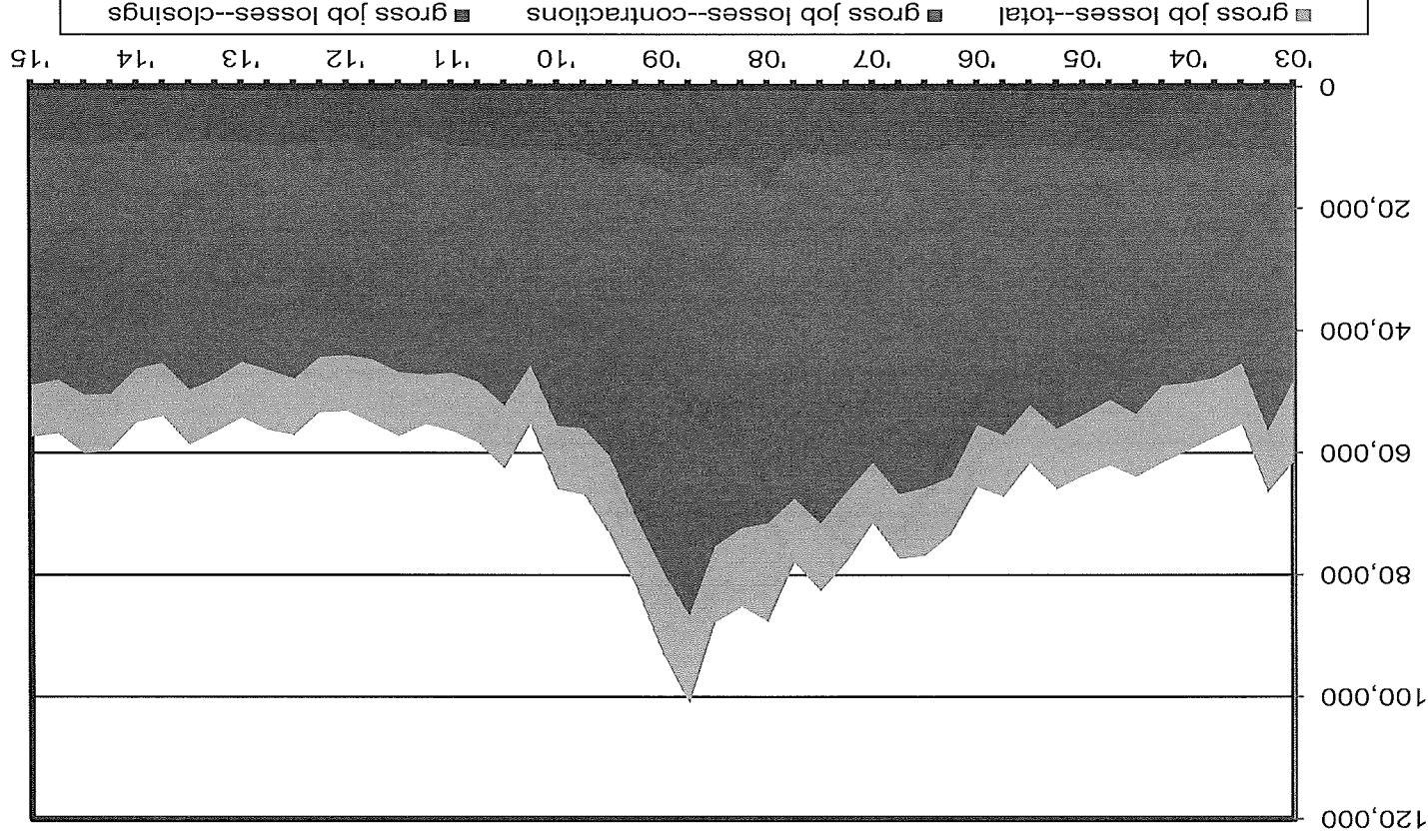
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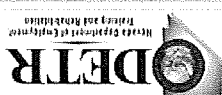


# Contractions at Existing Establishments Account for Bulk of Job Losses

## Private Sector Job Gains by Source; Bus. Employment Dynamics (Seas. Adj.)



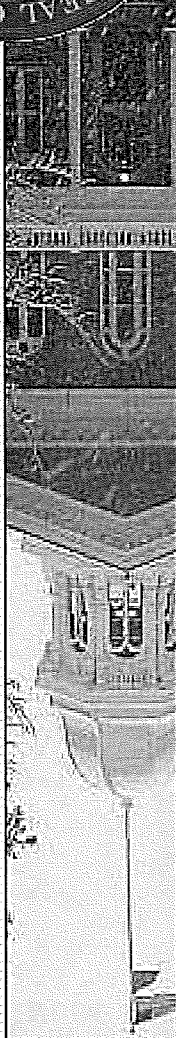
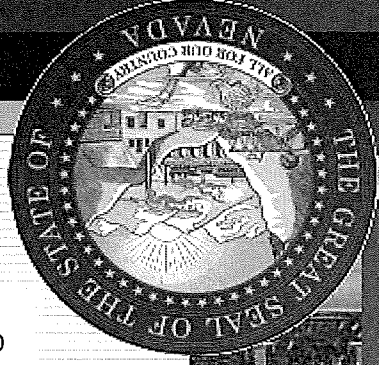
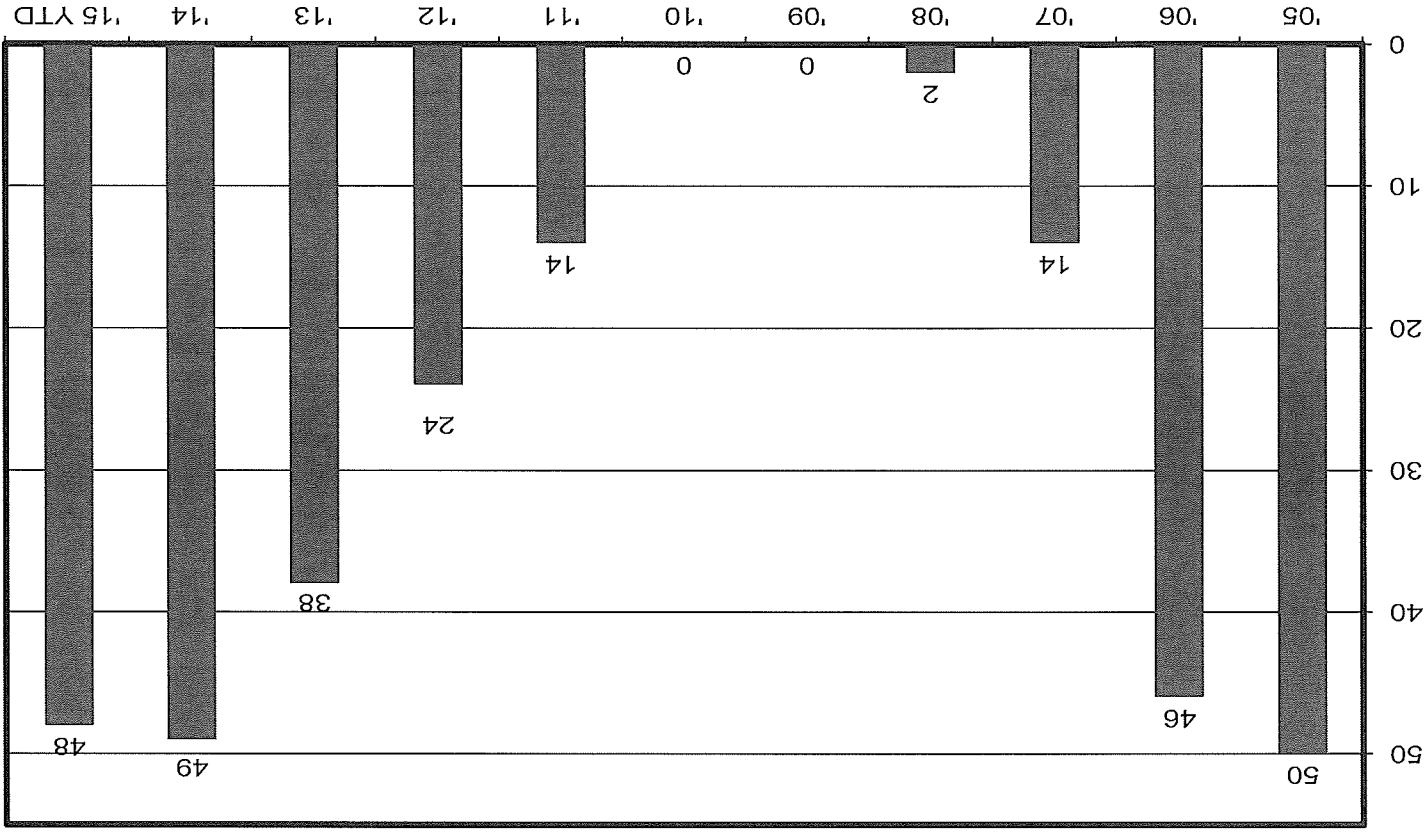
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# Silver State Job Growth #3 in the Nation

## Job Growth Rankings (# of states with slower private sector job growth than NV; 2015 YTD through 11Q)



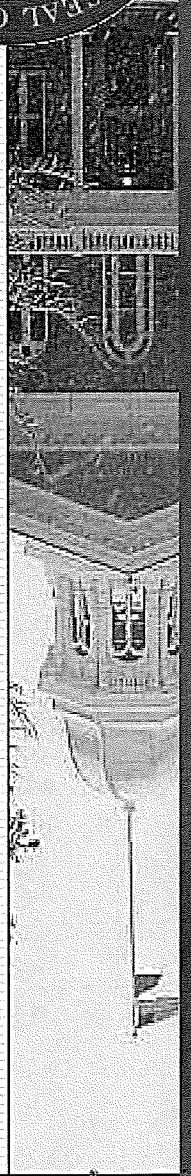
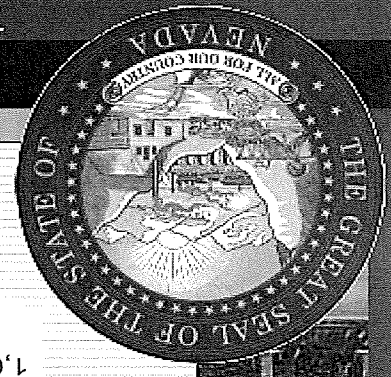
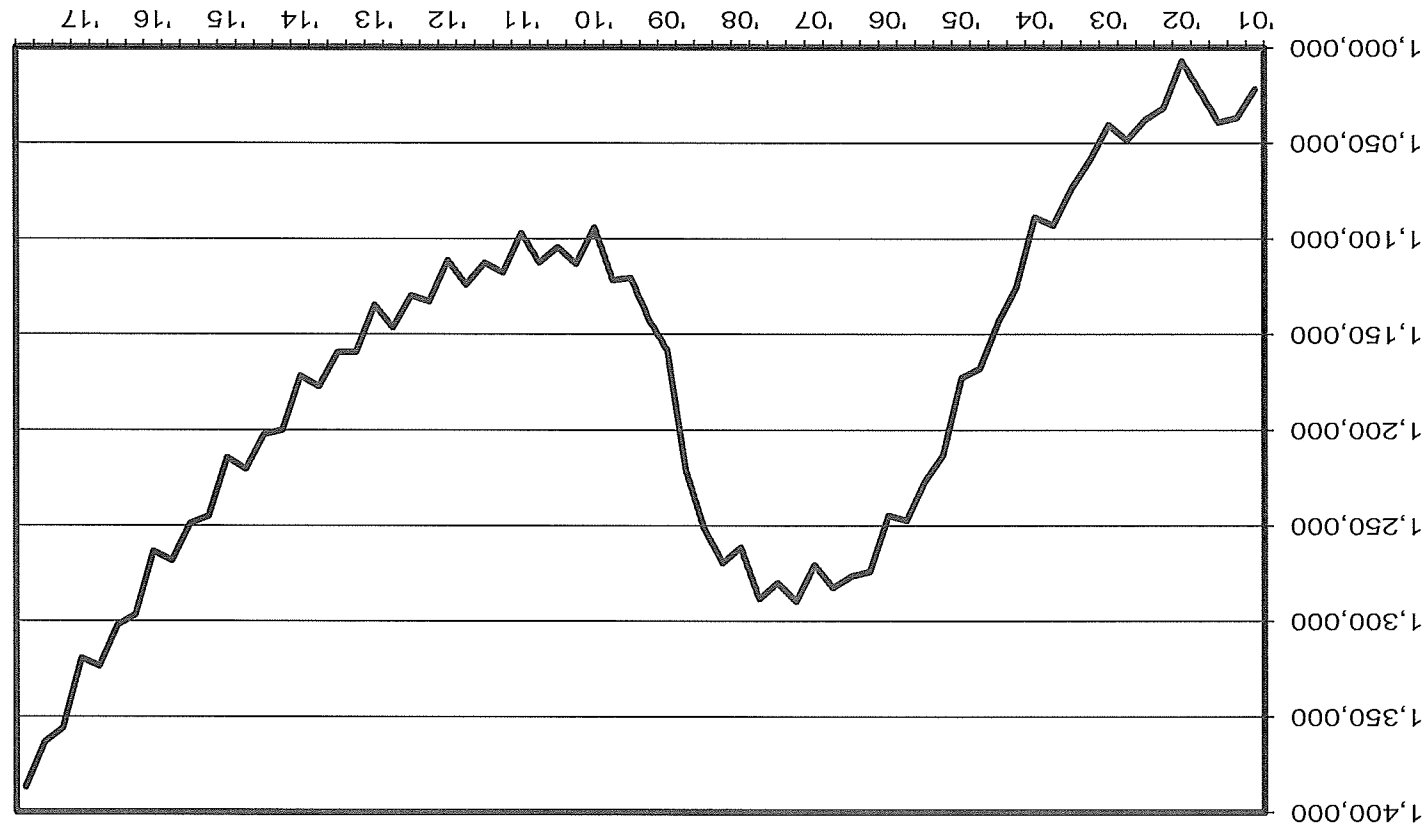
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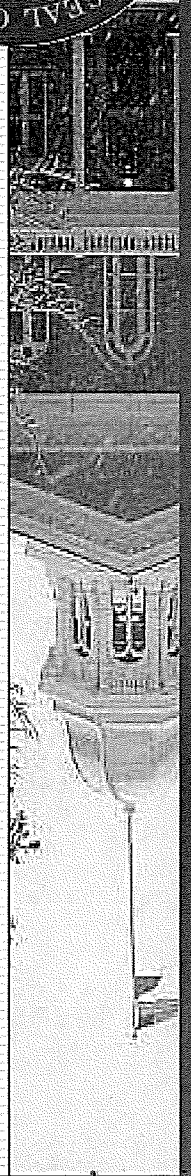
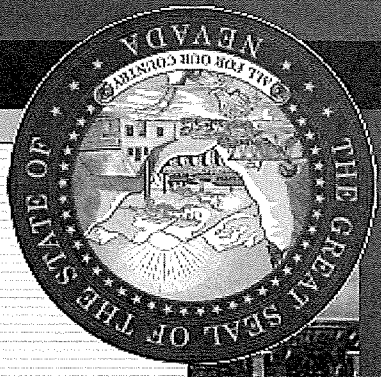
# Job Levels Exceed Pre-Recession Peak by 97K at Year-End 2017

## Total Jobs: History and Forecast



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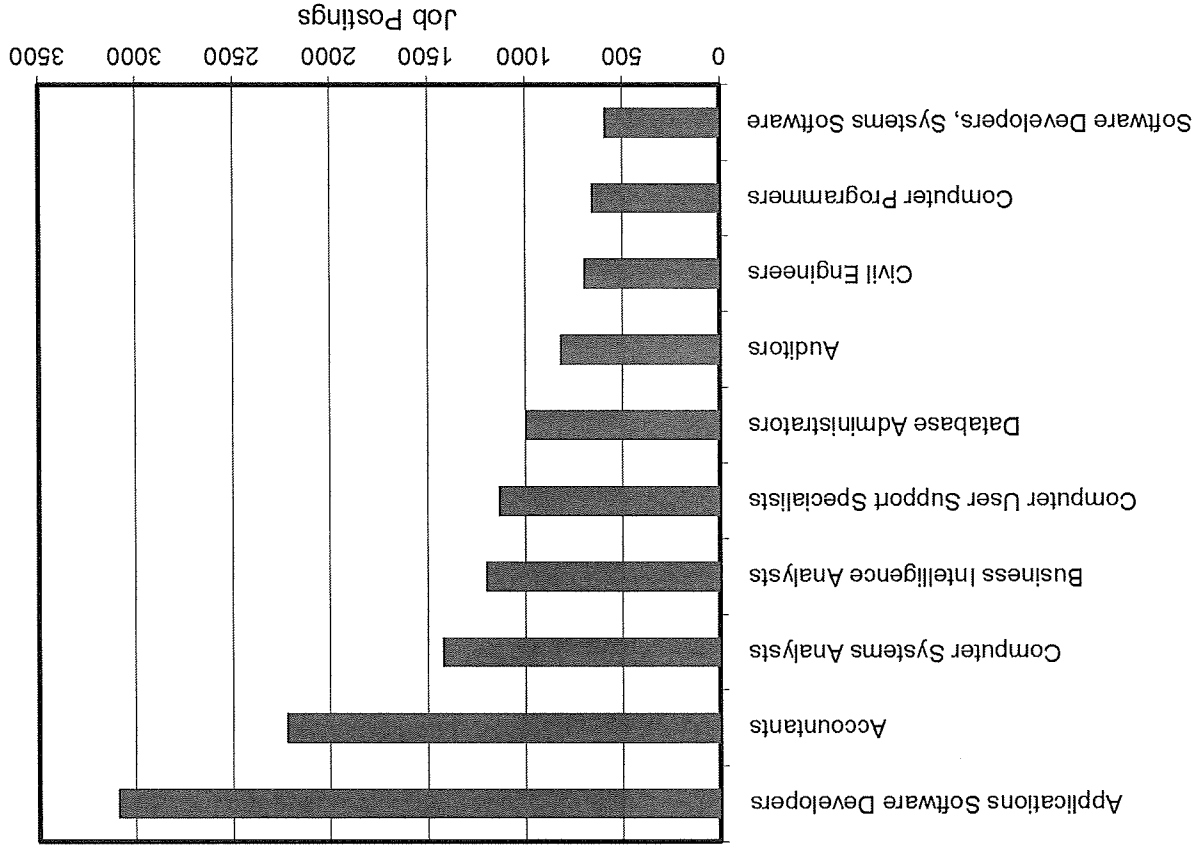


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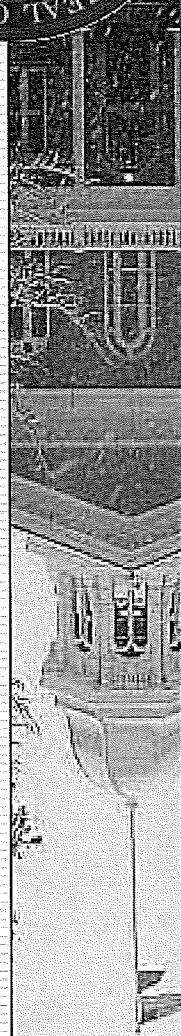
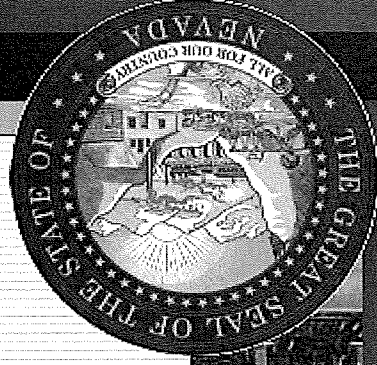
## Handouts and Discussion

# 3,100 Jobs for Applications Software Developers

## Top Occupations in Demand



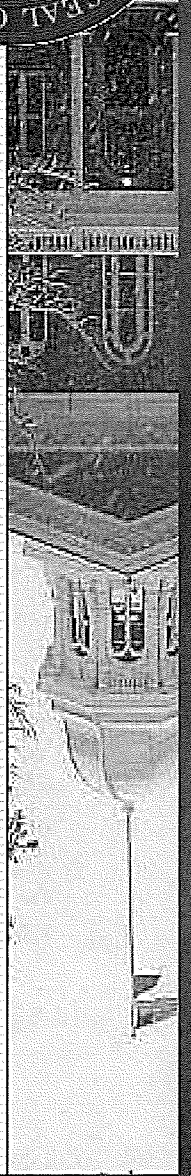
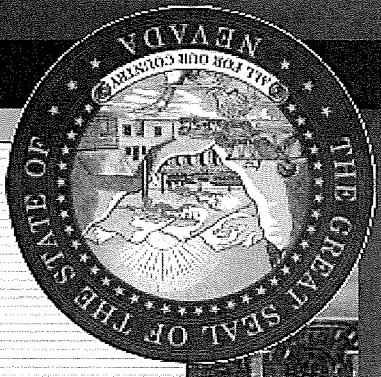
100% of job postings specified an occupation



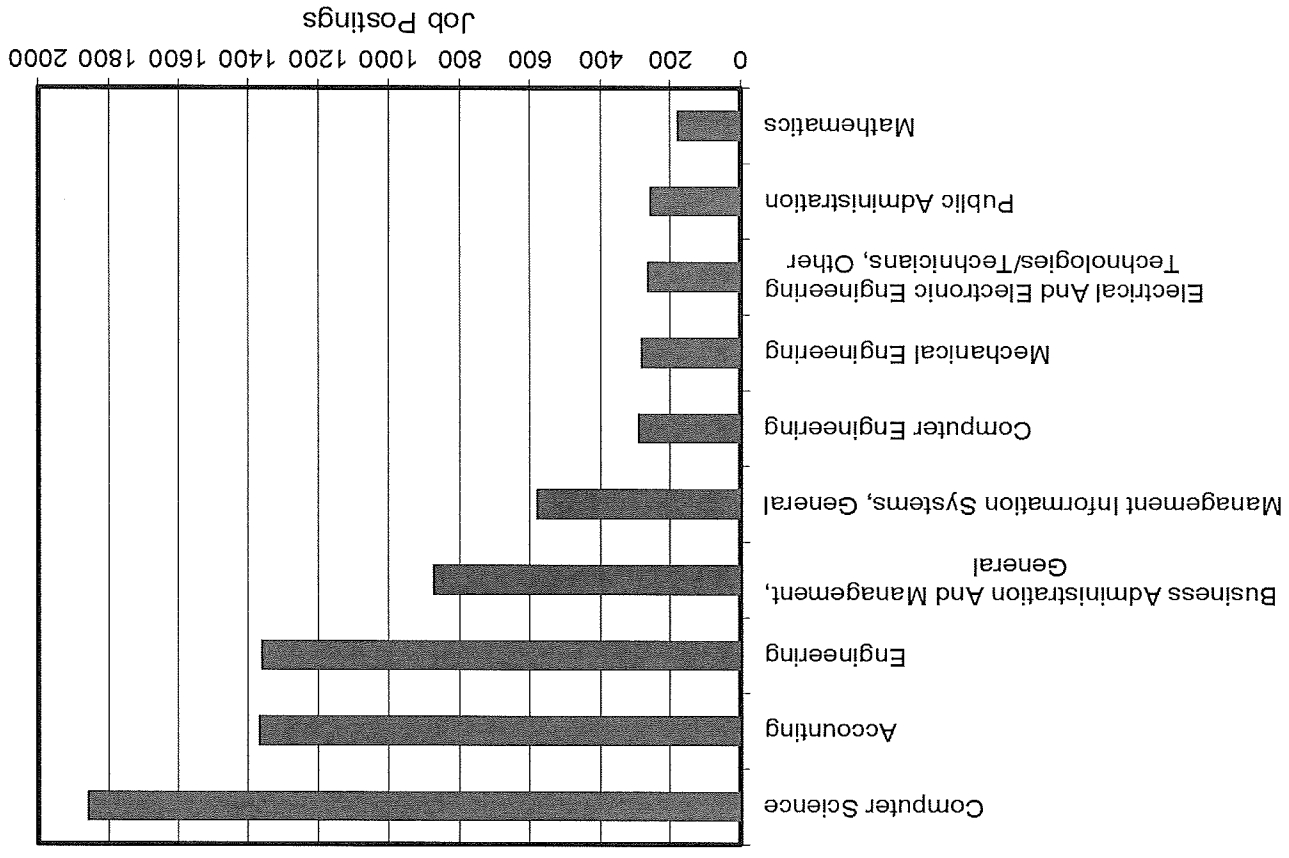
The Nevada Department of Employment, Training and Rehabilitation is a proactive workforce & rehabilitation agency







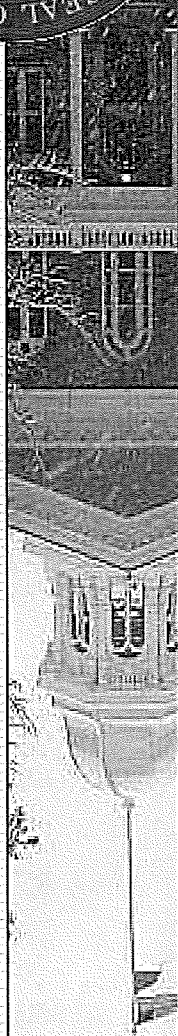
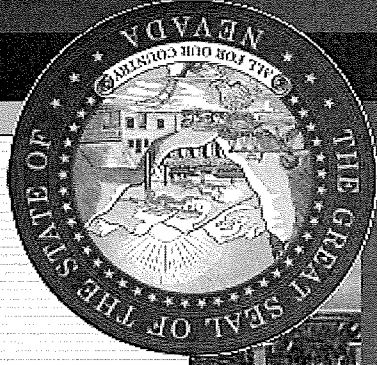
# 2,000 Ads Require Computer Science Programs of Study



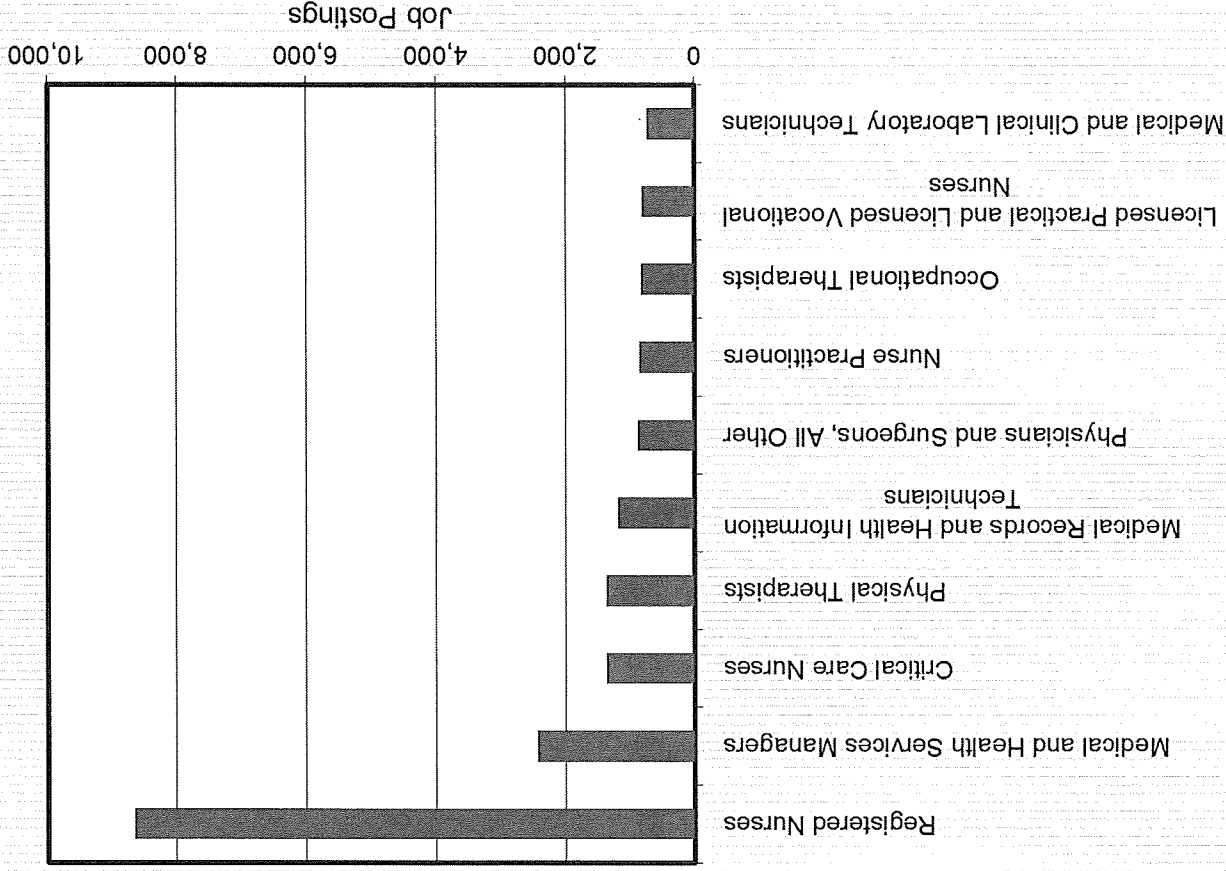
26% of job postings included a program of study

The Nevada Department of Employment, Training and Rehabilitation is a proactive workforce & rehabilitation agency





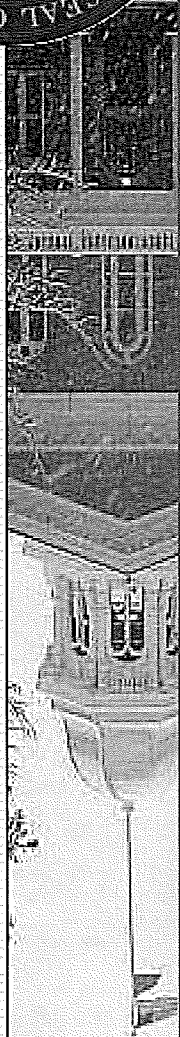
# 8,600 Jobs for Registered Nurses Top Occupations in Demand



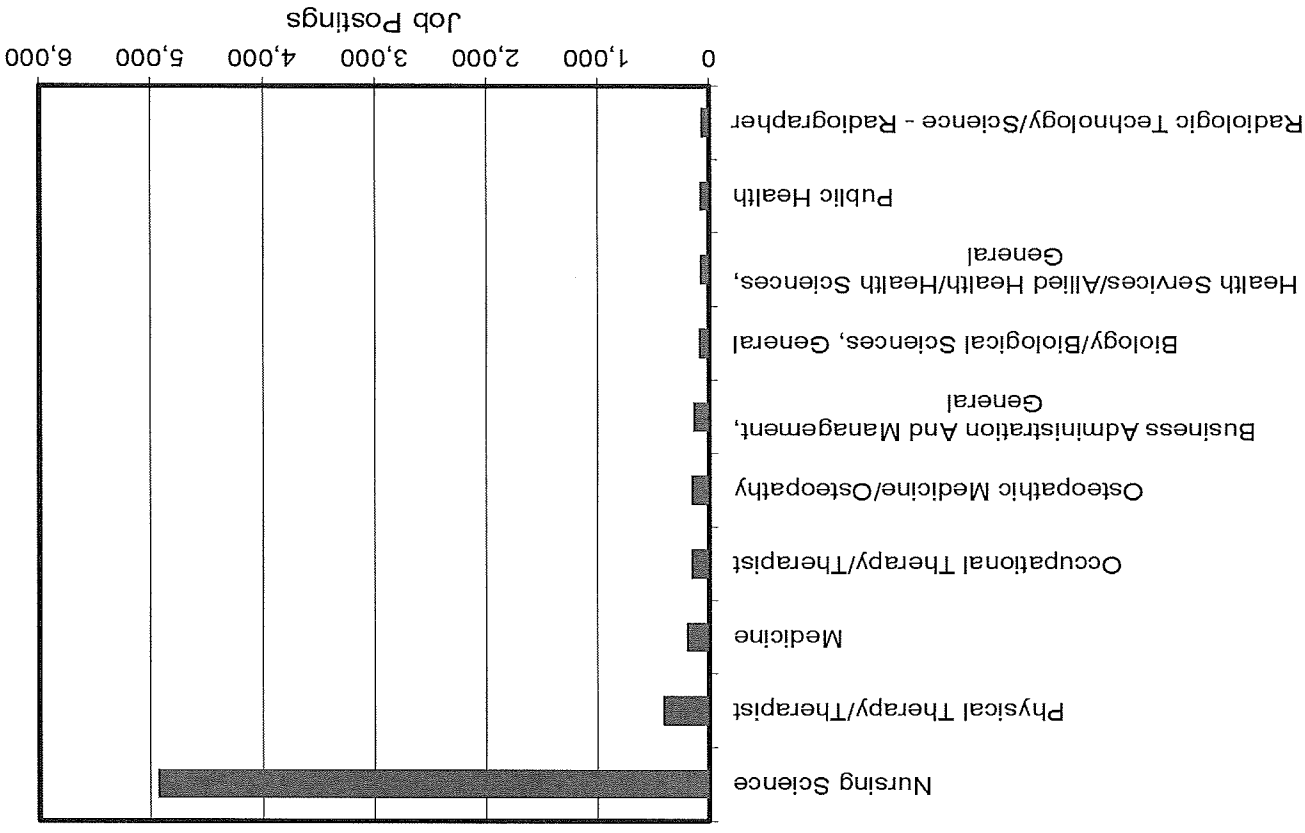
100% of job postings specified an occupation

The Nevada Department of Employment, Training and Rehabilitation is a proactive workforce & rehabilitation agency





# 4,900 Ads Require Nursing Science Programs of Study in Demand



24% of job postings included a program of study

The Nevada Department of Employment, Training and Rehabilitation is a proactive workforce & rehabilitation agency

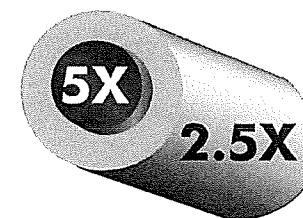




# HIGH-TECH INDUSTRY TAXONOMY - STEM - Subdomain 1

Life and Physical Science, Engineering, Mathematics and Information Technology Occupations

## Concentration of STEM Occupations by Industry



### CORE CONCENTRATION

Industries with at least 5X average concentration in STEM occupations

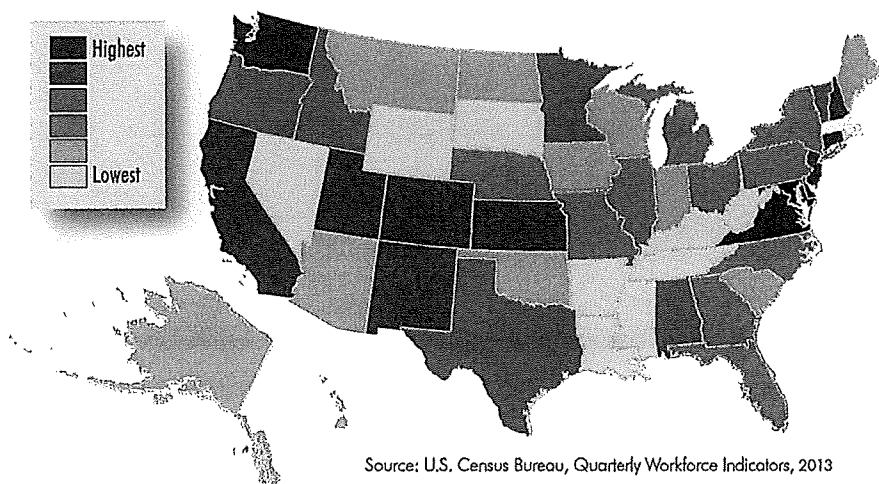
|        |                                                                               |           |
|--------|-------------------------------------------------------------------------------|-----------|
| 334100 | Computer and Peripheral Equipment Manufacturing                               | <b>5X</b> |
| 334200 | Communications Equipment Manufacturing                                        |           |
| 334400 | Semiconductor and Other Electronic Component Manufacturing                    |           |
| 334500 | Navigational, Measuring, Electromedical and Control Instruments Manufacturing |           |
| 336400 | Aerospace Product and Parts Manufacturing                                     |           |
| 511200 | Software Publishers                                                           |           |
| 518200 | Data Processing, Hosting and Related Services                                 |           |
| 519100 | Other Information Services                                                    |           |
| 541500 | Computer Systems Design and Related Services                                  |           |
| 541300 | Architectural, Engineering and Related Services                               |           |
| 541700 | Scientific Research and Development Services                                  |           |

### PERIPHERAL CONCENTRATION

Industries with at least 2.5X average concentration in STEM occupations

|        |                                                                                      |             |
|--------|--------------------------------------------------------------------------------------|-------------|
| 211100 | Oil and Gas Extraction                                                               | <b>2.5X</b> |
| 221100 | Electric Power Generation, Transmission and Distribution                             |             |
| 324100 | Petroleum and Coal Products Manufacturing                                            |             |
| 325100 | Basic Chemical Manufacturing                                                         |             |
| 325200 | Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing |             |
| 325400 | Pharmaceutical and Medicine Manufacturing                                            |             |
| 333200 | Industrial Machinery Manufacturing                                                   |             |
| 333300 | Commercial and Service Industry Machinery Manufacturing                              |             |
| 333600 | Engine, Turbine and Power Transmission Equipment Manufacturing                       |             |
| 334300 | Audio and Video Equipment Manufacturing                                              |             |
| 335300 | Electrical Equipment Manufacturing                                                   |             |
| 423400 | Professional and Commercial Equipment and Supplies Merchant Wholesalers              |             |
| 423600 | Household Appliances and Electrical and Electronic Goods Merchant Wholesalers        |             |
| 424200 | Drugs and Druggists' Sundries Merchant Wholesalers                                   |             |
| 486100 | Pipeline Transportation of Crude Oil                                                 |             |
| 517100 | Wired Telecommunications Carriers                                                    |             |
| 517200 | Wireless Telecommunications Carriers (except Satellite)                              |             |
| 517900 | Other Telecommunications                                                             |             |
| 521100 | Monetary Authorities-Central Bank                                                    |             |
| 541600 | Management, Scientific and Technical Consulting Services                             |             |
| 551100 | Management of Companies and Enterprises                                              |             |

### Concentration of Core High-Tech Industries by State



Below are the supersectors containing the industries that comprise this taxonomy.

21 - Mining, Quarrying & Oil & Gas Extraction

22 - Utilities

31-33 - Manufacturing

42 - Wholesale Trade

48-49 - Transportation & Warehousing

51 - Information

52 - Finance & Insurance

54 - Professional, Scientific & Technical Services

55 - Management of Companies & Enterprises



## Statewide 2015 Occupational Wages Estimates/All Industries

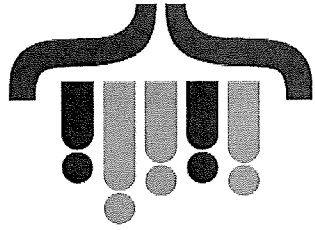
| SOC     | Occupation                                               | Estimated Employment | Mean Wage | 10th Percentile | 25th Percentile | 50th Percentile | 75th Percentile | 90th Percentile | Annual Average |
|---------|----------------------------------------------------------|----------------------|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| 00-0000 | Total all occupations                                    | 1189610              | \$20.34   | 8.62            | 10.92           | 16.13           | 24.65           | 36.76           | \$42,310       |
| 15-2011 | Actuaries                                                | 30                   | \$41.12   | 34.05           | 38.26           | 41.56           | 44.92           | 48.46           | \$85,540       |
| 15-2031 | Operations Research Analysts                             | 210                  | \$35.61   | 17.58           | 26.48           | 35.62           | 44.65           | 54.05           | \$74,060       |
| 15-2041 | Statisticians                                            | 80                   | \$50.00   | 0               | 0               | 0               | 0               | 0               | \$0            |
| 17-2011 | Aerospace Engineers                                      | 30                   | \$40.38   | 28.17           | 32.21           | 36.99           | 45.03           | 64.4            | \$83,980       |
| 17-2041 | Chemical Engineers                                       | 50                   | \$43.64   | 29.96           | 35.25           | 41.32           | 46.31           | 56.4            | \$90,770       |
| 17-2051 | Civil Engineers                                          | 1810                 | \$41.33   | 25.59           | 31.39           | 39.74           | 49.62           | 59.97           | \$85,970       |
| 17-2061 | Computer Hardware Engineers                              | 140                  | \$41.52   | 30.22           | 32.57           | 36.49           | 47.33           | 62.74           | \$86,360       |
| 17-2071 | Electrical Engineers                                     | 440                  | \$42.02   | 28.29           | 33.83           | 41.49           | 49.41           | 58.32           | \$87,410       |
| 17-2072 | Electronics Engineers, Except Computer                   | 530                  | \$43.95   | 26.61           | 33.56           | 41.32           | 48.49           | 58.65           | \$91,420       |
| 17-2081 | Environmental Engineers                                  | 350                  | \$41.67   | 25.05           | 31.52           | 38.61           | 49.7            | 60.25           | \$86,670       |
| 17-2111 | Health and Safety Engineers, Except Industrial           | 190                  | \$39.73   | 24.51           | 28.78           | 36.53           | 53.08           | 58.4            | \$82,640       |
| 17-2112 | Industrial Engineers                                     | 610                  | \$38.93   | 28.08           | 32.28           | 37.53           | 45.9            | 54              | \$80,980       |
| 17-2131 | Materials Engineers                                      | 110                  | \$43.49   | 27.08           | 36.04           | 43.57           | 52.06           | 58.35           | \$90,460       |
| 17-2141 | Mechanical Engineers                                     | 550                  | \$41.20   | 26.23           | 30.63           | 35.81           | 46.43           | 65.27           | \$85,700       |
| 17-2151 | Mining and Geological Engineers, Including Geophysicists | 520                  | \$43.56   | 27.62           | 34.83           | 43.28           | 52.75           | 59.85           | \$90,610       |
| 17-2161 | Nuclear Engineers                                        | 30                   | \$52.68   | 33.13           | 37.53           | 53.42           | 67.23           | 75.01           | \$109,570      |
| 17-2199 | Engineers, All Other                                     | 680                  | \$49.01   | 28.15           | 34.74           | 47.48           | 64.56           | 74.32           | \$101,930      |
| 17-3011 | Architectural and Civil Drafters                         | 710                  | \$23.84   | 14.71           | 16.78           | 21.35           | 29.5            | 36.81           | \$49,580       |
| 17-3012 | Electrical and Electronics Drafters                      | 520                  | \$27.01   | 16.53           | 18.8            | 27.67           | 33.09           | 36.51           | \$56,190       |
| 17-3013 | Mechanical Drafters                                      | 140                  | \$22.67   | 15.57           | 17.11           | 21.3            | 27.54           | 32.91           | \$47,140       |
| 17-3019 | Drafters, All Other                                      | 160                  | \$23.56   | 13.93           | 17.63           | 22.39           | 29.53           | 35.18           | \$49,010       |
| 17-3022 | Civil Engineering Technicians                            | 820                  | \$26.26   | 16.31           | 19.4            | 25.96           | 32.66           | 37.07           | \$54,620       |
| 17-3023 | Electrical and Electronics Engineering Technicians       | 1100                 | \$33.09   | 21.83           | 27.57           | 32.41           | 38.01           | 46.81           | \$68,840       |
| 17-3024 | Electro-Mechanical Technicians                           | 50                   | \$23.22   | 13.16           | 15.42           | 22.24           | 29.57           | 35.48           | \$48,300       |
| 17-3025 | Environmental Engineering Technicians                    | 230                  | \$30.12   | 17.46           | 24.8            | 31.81           | 35.8            | 40.53           | \$62,650       |
| 17-3026 | Industrial Engineering Technicians                       | 150                  | \$24.55   | 15.96           | 18.19           | 22.52           | 28.46           | 36              | \$51,070       |
| 17-3027 | Mechanical Engineering Technicians                       | 160                  | \$24.46   | 13.35           | 16.61           | 21.67           | 30.39           | 42.25           | \$50,870       |
| 17-3029 | Engineering Technicians, Except Drafters                 | 360                  | \$32.40   | 20.4            | 25.47           | 32.04           | 39.88           | 45.6            | \$67,390       |
| 17-3031 | Surveying and Mapping Technicians                        | 200                  | \$27.44   | 17.04           | 22.21           | 27.67           | 33.47           | 37.34           | \$57,070       |
| 19-1012 | Food Scientists and Technologists                        | 20                   | \$25.18   | 17.94           | 19.38           | 21.25           | 23.13           | 46.15           | \$52,380       |
| 19-1013 | Soil and Plant Scientists                                | 30                   | \$35.60   | 26.25           | 29.58           | 33.42           | 36.75           | 44.75           | \$74,050       |
| 19-1022 | Microbiologists                                          | 50                   | \$38.66   | 22.61           | 27.85           | 34.19           | 51.76           | 61.88           | \$80,420       |
| 19-1023 | Zoologists and Wildlife Biologists                       | 300                  | \$27.30   | 16.62           | 20.39           | 26.88           | 33.14           | 36.95           | \$56,780       |
| 19-1029 | Biological Scientists, All Other                         | 190                  | \$32.50   | 22.95           | 26.88           | 33.45           | 37.86           | 40.1            | \$67,600       |
| 19-1031 | Conservation Scientists                                  | 180                  | \$29.39   | 16.23           | 20.38           | 28.81           | 36.24           | 42.86           | \$61,130       |
| 19-1032 | Foresters                                                | 20                   | \$28.84   | 21.79           | 25.37           | 29.15           | 33.05           | 36.27           | \$59,990       |
| 19-1042 | Medical Scientists, Except Epidemiologists               | 190                  | \$48.71   | 27.97           | 38.68           | 45.14           | 54.69           | 73.65           | \$101,310      |
| 19-1099 | Life Scientists, All Other                               | 40                   | \$26.27   | 18.98           | 21.03           | 24.86           | 29.78           | 35.87           | \$54,630       |
| 19-2012 | Physicists                                               | 60                   | \$58.99   | 28.15           | 37.94           | 49.59           | 69.34           | 0               | \$122,690      |
| 19-2021 | Atmospheric and Space Scientists                         | 130                  | \$46.09   | 21.93           | 28.8            | 41.21           | 51.65           | 71.8            | \$95,880       |
| 19-2031 | Chemists                                                 | 260                  | \$41.88   | 22.92           | 28.65           | 40.74           | 53.01           | 61.81           | \$87,120       |
| 19-2041 | Environmental Scientists and Specialists                 | 710                  | \$33.43   | 19.81           | 25.52           | 32.49           | 38.65           | 50.41           | \$69,540       |
| 19-2042 | Geoscientists, Except Hydrologists and Geophysicists     | 750                  | \$44.04   | 21.04           | 32.58           | 43.18           | 53.98           | 66.96           | \$91,590       |
| 19-2043 | Hydrologists                                             | 200                  | \$45.36   | 23.02           | 31.59           | 42.57           | 55.63           | 69.44           | \$94,350       |
| 19-2099 | Physical Scientists, All Other                           | 120                  | \$47.90   | 25.14           | 33.9            | 50.32           | 61.5            | 71.44           | \$99,620       |
| 19-3011 | Economists                                               | 80                   | \$39.10   | 23.63           | 30.47           | 38.61           | 48.57           | 56.66           | \$81,330       |
| 19-3022 | Survey Researchers                                       | 60                   | \$15.27   | 9.9             | 11.94           | 13.58           | 17.14           | 23.26           | \$31,750       |
| 19-3031 | Clinical, Counseling, and School Psychologists           | 460                  | \$32.10   | 20.49           | 25.15           | 31.9            | 39.34           | 45.21           | \$66,770       |
| 19-3039 | Psychologists, All Other                                 | 50                   | \$40.94   | 21.04           | 41.05           | 43.71           | 46.36           | 51.65           | \$85,160       |
| 19-3051 | Urban and Regional Planners                              | 190                  | \$39.95   | 27.09           | 33.41           | 39.91           | 46.35           | 54.74           | \$83,090       |
| 19-3091 | Anthropologists and Archeologists                        | 170                  | \$30.45   | 19.22           | 21.65           | 28.12           | 36.23           | 43.7            | \$63,330       |
| 19-3093 | Historians                                               | 10                   | \$30.08   | 19.44           | 21.64           | 30.94           | 38.99           | 41.21           | \$62,560       |
| 19-3099 | Social Scientists and Related Workers                    | 140                  | \$35.17   | 23.04           | 27.88           | 33.42           | 41.05           | 50.85           | \$73,160       |
| 19-4021 | Biological Technicians                                   | 170                  | \$21.14   | 15.21           | 18.08           | 20.81           | 23.15           | 26.43           | \$43,960       |
| 19-4031 | Chemical Technicians                                     | 750                  | \$24.06   | 14.06           | 19.25           | 23.84           | 29.31           | 34.38           | \$50,050       |

# Statewide

## 2015 Occupational Wages Estimates/All Industries

| SOC                                                  | Occupation                                                | Estimated Employment | Mean Wage | Percentile |       |       |       |       | Annual Average |
|------------------------------------------------------|-----------------------------------------------------------|----------------------|-----------|------------|-------|-------|-------|-------|----------------|
|                                                      |                                                           |                      |           | 10th       | 25th  | 50th  | 75th  | 90th  |                |
| 00-0000                                              | Total all occupations                                     | 1,189,610            | \$20.34   | 8.62       | 10.92 | 16.13 | 24.65 | 36.76 | \$42,310       |
| 11-9111                                              | Medical and Health Services Managers                      | 1,950                | \$50.74   | 24.78      | 37.64 | 47.03 | 60.87 | 76.76 | \$105,540      |
| 25-1071                                              | Health Specialists Teachers, Postsecondary                | 650                  | \$0.00    | 0          | 0     | 0     | 0     | 0     | \$134,370      |
| 25-1072                                              | Nursing Instructors and Teachers, Postsecondary           | 570                  | \$0.00    | 0          | 0     | 0     | 0     | 0     | \$76,730       |
| 29-1011                                              | Chiropractors                                             | 360                  | \$31.32   | 14.56      | 18.44 | 33.23 | 39.07 | 45.75 | \$65,140       |
| 29-1021                                              | Dentists, General                                         | 990                  | \$69.60   | 26.04      | 38.53 | 60.85 | 0     | 0     | \$144,770      |
| 29-1029                                              | Dentists, All Other Specialists                           | 30                   | \$90.79   | 56.71      | 74.18 | 83.79 | 0     | 0     | \$188,840      |
| 29-1031                                              | Dietitians and Nutritionists                              | 240                  | \$31.54   | 21.1       | 25.64 | 30.93 | 35.3  | 38.28 | \$65,600       |
| 29-1041                                              | Optometrists                                              | 340                  | \$40.54   | 14.48      | 36.82 | 41.75 | 47.13 | 56.32 | \$84,310       |
| 29-1051                                              | Pharmacists                                               | 1,930                | \$57.62   | 41.19      | 51.99 | 60.48 | 68.41 | 73.32 | \$119,850      |
| 29-1061                                              | Anesthesiologists                                         | 0                    | \$123.70  | 84.27      | 0     | 0     | 0     | 0     | \$257,300      |
| 29-1062                                              | Family and General Practitioners                          | 1,020                | \$76.09   | 39.24      | 46.72 | 76.79 | 0     | 0     | \$158,270      |
| 29-1063                                              | Internists, General                                       | 220                  | \$87.34   | 34.57      | 60.36 | 72.47 | 0     | 0     | \$181,680      |
| 29-1064                                              | Obstetricians and Gynecologists                           | 180                  | \$125.86  | 87.74      | 0     | 0     | 0     | 0     | \$261,790      |
| 29-1065                                              | Pediatricians, General                                    | 130                  | \$68.61   | 49.76      | 53.9  | 64.88 | 81.74 | 0     | \$142,710      |
| 29-1066                                              | Psychiatrists                                             | 40                   | \$94.39   | 79.66      | 84.17 | 0     | 0     | 0     | \$196,330      |
| 29-1067                                              | Surgeons                                                  | 340                  | \$124.93  | 83.54      | 0     | 0     | 0     | 0     | \$259,850      |
| 29-1069                                              | Physicians and Surgeons, All Other                        | 1,310                | \$99.27   | 29.82      | 79.02 | 0     | 0     | 0     | \$206,480      |
| 29-1071                                              | Physician Assistants                                      | 750                  | \$54.19   | 38.58      | 41.23 | 45.52 | 54.26 | 85.42 | \$112,700      |
| 29-1081                                              | Podiatrists                                               | 40                   | \$72.67   | 48.35      | 54.34 | 61.29 | 71.79 | 0     | \$151,150      |
| 29-1122                                              | Occupational Therapists                                   | 690                  | \$51.80   | 28.08      | 37.37 | 45.1  | 58.06 | 87.05 | \$107,750      |
| 29-1123                                              | Physical Therapists                                       | 1,500                | \$61.49   | 33.46      | 39.45 | 48.31 | 74.13 | 0     | \$127,900      |
| 29-1124                                              | Radiation Therapists                                      | 70                   | \$39.36   | 26.14      | 31.32 | 38.98 | 45.72 | 55.77 | \$61,860       |
| 29-1125                                              | Recreational Therapists                                   | 70                   | \$20.00   | 10.72      | 15.12 | 20.55 | 24.43 | 28.87 | \$41,600       |
| 29-1126                                              | Respiratory Therapists                                    | 920                  | \$34.55   | 25.57      | 29.75 | 34.13 | 39.76 | 45.49 | \$71,870       |
| 29-1127                                              | Speech-Language Pathologists                              | 810                  | \$41.82   | 20.23      | 25.56 | 34.56 | 46.65 | 66.97 | \$86,980       |
| 29-1128                                              | Exercise Physiologists                                    | 10                   | \$30.08   | 24.33      | 26.22 | 28.98 | 34.01 | 36.66 | \$62,570       |
| 29-1129                                              | Therapists, All Other                                     | 40                   | \$45.20   | 27.42      | 38.71 | 49.21 | 54.64 | 57.88 | \$94,020       |
| 29-1131                                              | Veterinarians                                             | 560                  | \$43.60   | 30.53      | 35.86 | 42.07 | 49.74 | 58.36 | \$90,680       |
| 29-1141                                              | Registered Nurses                                         | 18,430               | \$38.58   | 27.69      | 32.4  | 38.11 | 44.9  | 51.51 | \$80,240       |
| 29-1151                                              | Nurse Anesthetists                                        | 90                   | \$104.29  | 65.36      | 73.48 | 0     | 0     | 0     | \$216,930      |
| 29-1171                                              | Nurse Practitioners                                       | 540                  | \$45.89   | 32.18      | 39.96 | 45.65 | 53.7  | 59.9  | \$95,450       |
| 29-1181                                              | Audiologists                                              | 0                    | \$26.90   | 8.03       | 9.1   | 25.37 | 35.47 | 56.64 | \$55,940       |
| 29-1199                                              | Health Diagnosing and Treating Practitioners, All Other   | 150                  | \$42.43   | 25.58      | 33.04 | 44.89 | 52.07 | 56.28 | \$88,250       |
| 29-2011                                              | Medical and Clinical Laboratory Technologists             | 1,080                | \$30.84   | 18.64      | 23.44 | 31.91 | 37.42 | 43.31 | \$64,150       |
| 29-2012                                              | Medical and Clinical Laboratory Technicians               | 910                  | \$20.61   | 14.09      | 16.11 | 18.96 | 25.04 | 29.31 | \$42,860       |
| 29-2021                                              | Dental Hygienists                                         | 1,320                | \$42.94   | 32.21      | 38.23 | 43.21 | 49.39 | 56.23 | \$89,320       |
| 29-2031                                              | Cardiovascular Technologists and Technicians              | 410                  | \$30.51   | 15.14      | 20.4  | 32.4  | 41.08 | 44.96 | \$63,460       |
| 29-2032                                              | Diagnostic Medical Sonographers                           | 340                  | \$36.04   | 28.77      | 32.04 | 35.91 | 41.65 | 45.67 | \$74,970       |
| 29-2033                                              | Nuclear Medicine Technologists                            | 90                   | \$36.93   | 30.42      | 32.78 | 36.7  | 42.36 | 45.85 | \$76,810       |
| 29-2034                                              | Radiologic Technologists and Technicians                  | 1,390                | \$31.07   | 20.83      | 24.98 | 30.03 | 36.35 | 45.03 | \$64,610       |
| 29-2035                                              | Magnetic Resonance Imaging Technologists                  | 300                  | \$42.92   | 33.27      | 38.99 | 43.34 | 48.4  | 55.75 | \$89,280       |
| 29-2041                                              | Emergency Medical Technicians and Paramedics              | 1,230                | \$21.10   | 11.96      | 15.26 | 19.42 | 26.56 | 33.35 | \$43,890       |
| 29-2051                                              | Dietetic Technicians                                      | 90                   | \$17.90   | 10.52      | 14.08 | 18.67 | 21.88 | 23.86 | \$37,230       |
| 29-2052                                              | Pharmacy Technicians                                      | 2,730                | \$16.15   | 11.09      | 13.02 | 15.83 | 18.33 | 22.16 | \$33,600       |
| 29-2053                                              | Psychiatric Technicians                                   | 100                  | \$14.84   | 12.38      | 13.05 | 14.17 | 15.89 | 18.78 | \$30,870       |
| 29-2054                                              | Respiratory Therapy Technicians                           | 40                   | \$32.84   | 25.16      | 27.38 | 31.52 | 38.75 | 44.59 | \$68,310       |
| 29-2055                                              | Surgical Technologists                                    | 870                  | \$27.64   | 18.24      | 22.97 | 27.48 | 32.8  | 37.68 | \$57,500       |
| 29-2056                                              | Veterinary Technologists and Technicians                  | 640                  | \$17.00   | 12.57      | 15.1  | 17.05 | 19.03 | 21.9  | \$35,360       |
| 29-2057                                              | Ophthalmic Medical Technicians                            | 0                    | \$16.99   | 14.86      | 15.69 | 16.97 | 18.26 | 20.63 | \$35,330       |
| 29-2061                                              | Licensed Practical and Licensed Vocational Nurses         | 2,300                | \$25.36   | 19.39      | 21.86 | 25.21 | 28.63 | 32.75 | \$52,760       |
| 29-2071                                              | Medical Records and Health Information Technicians        | 1,600                | \$19.65   | 12.64      | 14.12 | 17.74 | 23.42 | 30.24 | \$40,860       |
| 29-2081                                              | Opticians, Dispensing                                     | 350                  | \$22.02   | 12.89      | 15.74 | 21.13 | 28.28 | 33.69 | \$45,790       |
| 29-2091                                              | Orthotists and Prosthetists                               | 90                   | \$31.78   | 22.09      | 25.3  | 29.91 | 38.16 | 44.66 | \$66,100       |
| 29-2099                                              | Health Technologists and Technicians, All Other           | 950                  | \$23.58   | 14.85      | 18.75 | 21.81 | 27.28 | 35.07 | \$49,040       |
| 29-9011                                              | Occupational Health and Safety Specialists                | 550                  | \$34.54   | 21.53      | 27.17 | 34.12 | 40.65 | 46.87 | \$71,840       |
| 29-9012                                              | Occupational Health and Safety Technicians                | 140                  | \$27.37   | 15.16      | 20.33 | 29.09 | 34.25 | 37.96 | \$56,930       |
| 29-9091                                              | Athletic Trainers                                         | 80                   | \$0.00    | 0          | 0     | 0     | 0     | 0     | \$39,870       |
| 29-9099                                              | Healthcare Practitioners and Technical Workers, All Other | 320                  | \$21.97   | 15.21      | 16.21 | 17.87 | 23.72 | 37.13 | \$45,710       |
| Total STEM Employment - Health Care Occupations Only |                                                           | 52,890               |           |            |       |       |       |       |                |
| Percent of Total Employment                          |                                                           | 4.4%                 |           |            |       |       |       |       |                |

Attachment D



**EDUCATION COMMISSION**  
OF THE STATES

# STEM: A National Policy Perspective

Jennifer Zinth  
Director, High School and STEM  
Nevada STEM Advisory Council Meeting  
January 25, 2016

Your education policy team.

# Who we are

The essential, indispensable member of  
any team addressing education policy.



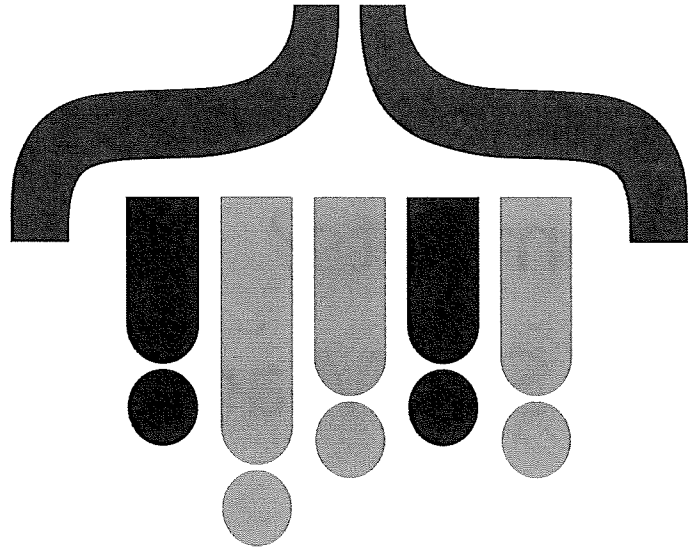
# How we do it

COUNSEL

RESEARCH

CONVENE

REPORT





# STEM Policy Trends

- Organizing/coordinating the work

- Early college opportunities

- Scholarships

- Teacher recruitment scholarships



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Your education policy team.

# Early College/Work Opportunities

Colorado: P-Tech Model

Iowa: Appropriation to support STEM  
internships

LOTS of policy action re: CTE with  
implications for STEM

# Teacher Recruitment Scholarships

Indiana: STEM Teacher Recruitment

New York: NYS Math & Science  
Teaching Incentive Scholarships

# Challenges with STEM Plans

- Wanting to take on too much
- Not supported by adequate funding streams

*"We have studied countless state and other STEM plans over the past 2 years and found them to be overly complex and largely inactionable as they seek to do too much with too few resources."*

Dr. Tom Peters, Executive Director

South Carolina Coalition for Mathematics & Science



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OF THE STATES

Your education policy team.

How can states develop a cohesive  
approach that doesn't attempt to  
take on too little or too much, and  
that has adequate and dedicated  
funding?

# Regional STEM Hub Network

State (or state-coordinated regional)  
networks active in ≥ 14 states

Bring together K-12, PS,  
business/industry, other partners to  
address education and workforce needs



# Massachusetts

Issued "Recommended Functions and  
Related Performance Criteria for  
STEM Networks" in July 2015

Establishes

- Eligibility criteria for funding
- Three areas of performance criteria

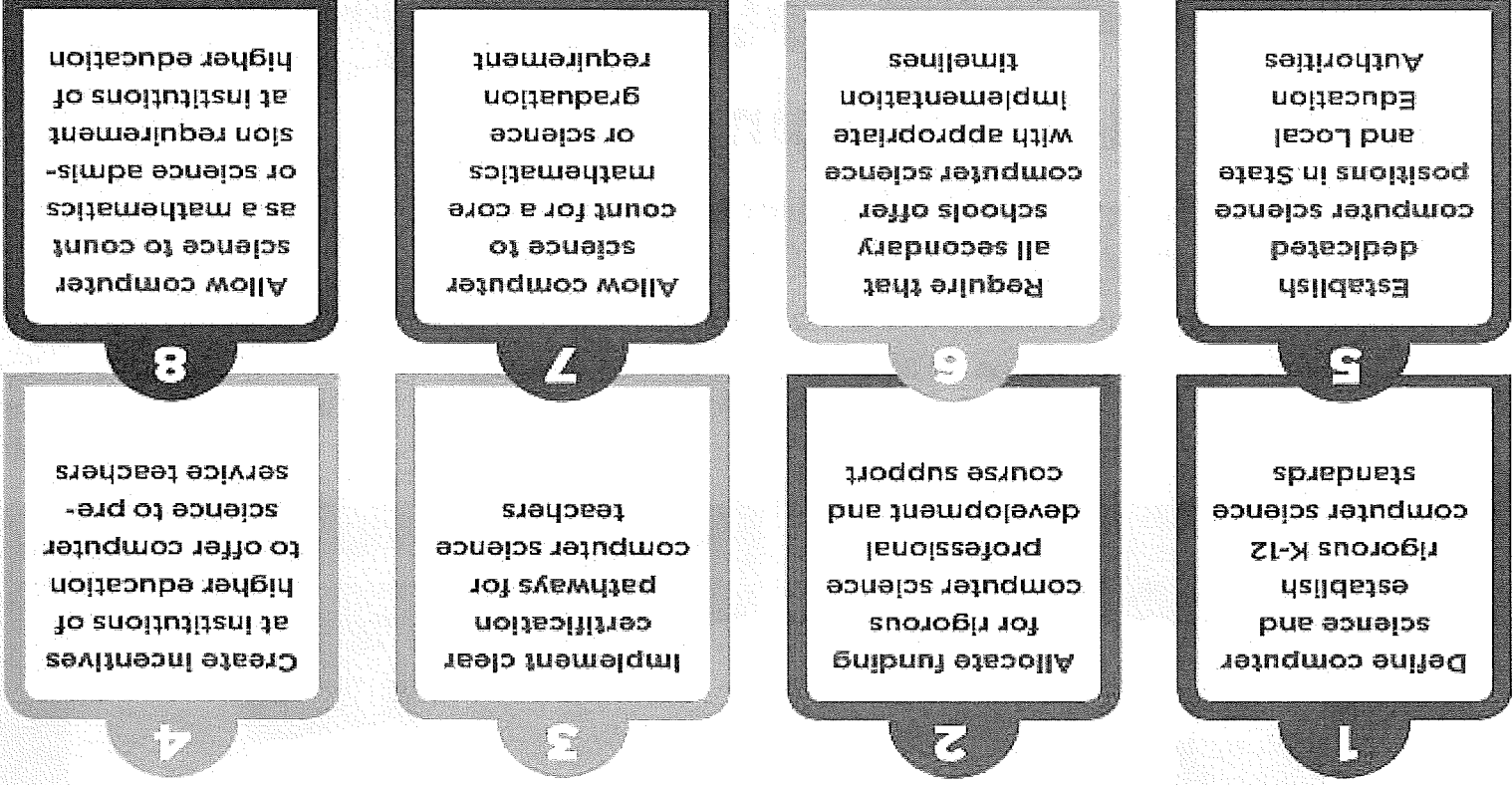
# Utah STEM Action Center

- Single statewide hub
- Staffed by multiple FTEs
- Coordinate activities from early grades through postsecondary
- Provide research- and experience-based policy recommendations and implement legislative/agency directives

# Computer Science

## What Can States Do? Policy Reforms

Eight ideas to make computer science fundamental to K-12 education:



Source: Code.org



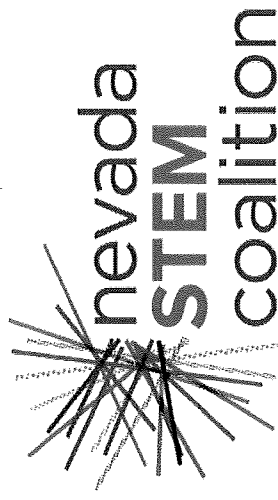
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# QUESTIONS?





# STEM SUMMIT II 2016

## PLANNING OUTLINE

### Summit Planning Committee

|                       |                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------|
| Aimee Allen           | Art Educator                                                                                  |
| Kris Carroll          | K-12 Regional Science Trainer                                                                 |
| David Crowther, Ph.D. | Professor of Science Education, UNR College of Education & Board Chair, Nevada STEM Coalition |
| Eaton Dunkleberger    | Executive Director, Sierra Nevada Journeys                                                    |
| Ken Evans             | President, Las Vegas Urban Chamber of Commerce                                                |
| John Gardner          | Emeritus Special Assistant to the President, DRI                                              |
| Jeff Glass            | Entrepreneurship Consultant                                                                   |
| Jeneane Harter        | Executive Director, Sustainable Nevada                                                        |
| Larry Mason           | P-20 Advisor, Social Justice; Advisor for Multilingual Solutions                              |
| Eileen Milligan       | K-6 Science, Clark County School District                                                     |
| David Miller          | Assistant Principal, Nevada Learning Academy, Clark County High School                        |
| Beth Wells            | Executive Director, Nevada STEM Coalition                                                     |



## **II. Goals for Nevada STEM Summit II**

1. Identify progress of STEM/STEAM initiatives in Nevada and roadblocks to achieving success.
2. Identify and share best STEM practices to support the development of STEM policy and practice.
3. Renew, enhance, and develop new collaborations and partnerships to achieve goals.
4. Identify opportunities for strong partnerships among educators, industry, and community to strengthen student pipelines to career success.
5. Infuse all goals with strong commitment to equity.
6. Produce recommendations for strategic planning and policy for stakeholders statewide.

### III. Agenda

#### Day 1

8-9 continental breakfast-  
displays of student work around room

9-9:45 Recommended Keynote Speaker: Milton Chen, former Executive Director of Edutopia

10:00- 12:00 Morning Roundtable Breakout Sessions (Choose one)

- (1) Technology and Computer Science- Solutions for policy, law and implementation  
**Lead: Mark Newburn's Computer Science Committee**
- (2) How to support and promote STEM education through policy and law in Nevada and the nation. **Lead: TBD**
- (3) Lifelong Learning Highway: Sharing and aligning models for workforce pathways to Nevada's economic sectors in order to facilitate information for students, parents, education, and community. **Lead: TBD**
- (4) Entrepreneurship pathways and job readiness skills that build student success from school through career- **Lead: Jeff Glass and team**
- (5) Industry/Education Partnerships: Expanding opportunities for internships, mentoring, industry tours, educating counselors and parents. Identifying and scaling up successful alignments between K-12 and postsecondary education providers to ensure lifelong student success.  
**Lead: TBD**
- (6) Life-long learning: Informal Education: Opportunities for all  
**Lead: Informal STEM Committee**
- (7) Developing and increasing access to quality STEM/STEAM Curriculum, Strategies, and Resources  
**Lead: TBD NSSTA and RPDP's?**
- (8) Defining STEAM education and opportunities for integration into STEM curriculum.  
**Lead: Nevada STEM Coalition STEAM Task Force**

12:10-1:15 Buffet Lunch and Panel Discussion TBD

1:30--3:30 Afternoon Roundtable Breakout Sessions (choose 1)

See topics from morning breakout sessions

4:-6 Networking Reception  
Student demonstrations/poster sessions

## Day Two

### Version I

8:00 – 9:00 am Continental Breakfast  
Exhibits/Displays/Vendors

9:00-10 Share out from Workshops 1, 2, 7, and 8

10-10:15 break

10:15-11 Panel Discussion?

11-12:00 Share out from Workshops 3, 4, 5, 6

noon Buffet Lunch and networking or closing speaker

### Version II (most participants do not stay)

8:00-9:00 am Full Breakfast

9-12 Roundtable Committees meet separately with small group of additional participants who were either invited or registered for second day. Goal is to process results of two workshops and make summary report

12:00 pm Lunch

#### IV. Roundtable Design- Committee Duties for each Roundtable

- identify chair and members to plan program
- research topic, both in and outside of Nevada
- identify challenges and roadblocks
- develop agenda/discussion for roundtable/goals for roundtable
- goals include identifying roadblocks and recommendations for strategies and policy
- Provide reference list
- submit chapter for briefing book: background material for participants, surveys, exemplary programs, etc.

#### V. Follow-up

##### A. Committee for Evaluation and Follow up

- Summarize data and evaluations
- Summarize recommendations
- Create Report
- Recommendations for Next Steps for STEM Coalition

##### B. Measurable Outcomes

- media coverage during event (indicates community awareness/interest)
- media coverage after event (indicates engagement with issue)
- Summative report with recommendations for stakeholders statewide
- Future state strategic plan shows incorporation of some of summit recommendations
- Positive feedback on evaluation forms, that participants felt the event to help them grow in knowledge/build new partnership potential/renew energy and interest/join a network or organization/new ideas for curriculum or PD/increased interest from business community to partner with educators/
- year-later survey- documenting if participants kept engagement, energy, started new partnerships, felt that the summit helped them move the needle in their sphere of influence