

# Making the Case for Computer Science Education in Oregon, June 2016



Computer Science is a STEM (Science Technology Engineering and Math) discipline itself, and a critical tool for all STEM disciplines.

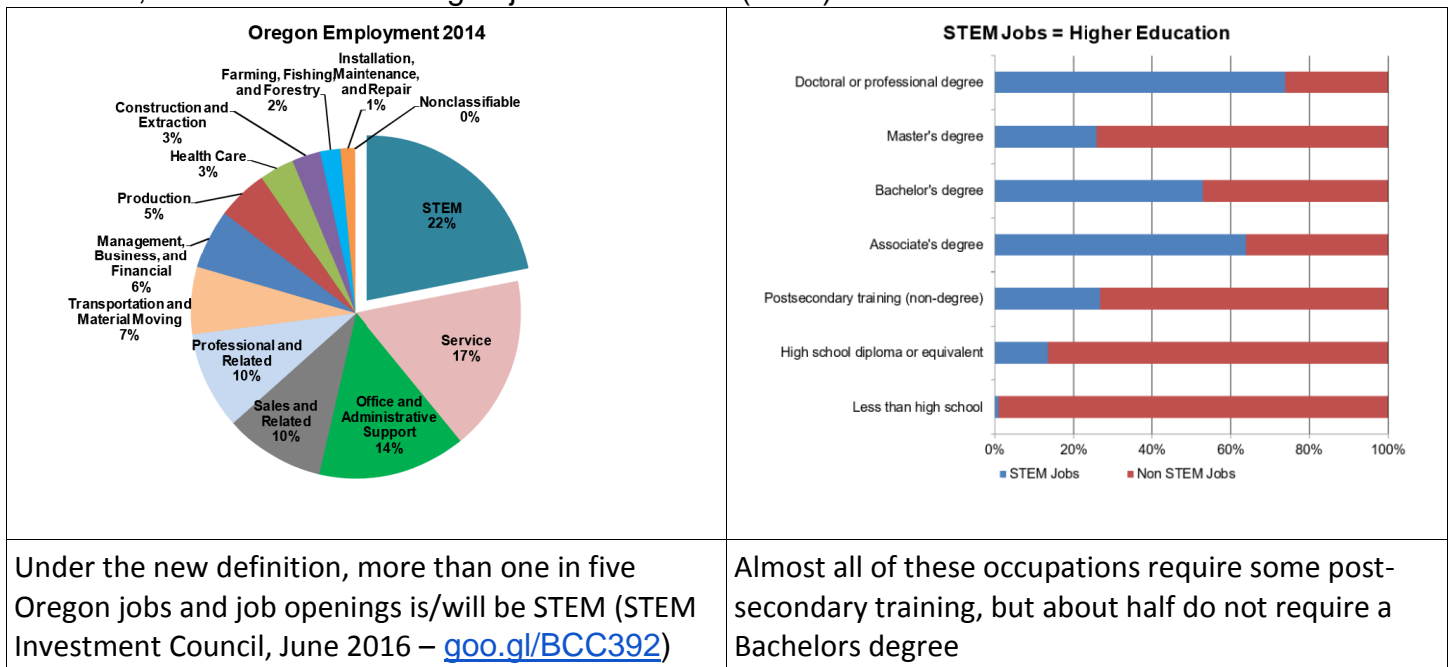
## Overview

- **White House: Computer Science for All Initiative** - [goo.gl/zcxxc3](http://goo.gl/zcxxc3)
  - NSF Building a Foundation for CS for All -- [goo.gl/kStmn6](http://goo.gl/kStmn6)
- **Change the Equation Vital Signs** (these data likely based on older Bureau of Labor Statistics definitions of STEM occupations) - [goo.gl/PI1cJj](http://goo.gl/PI1cJj)
- **The Case for Improving US Computer Science Education**, Information Technology & Innovation Foundation, May 2016 -- [goo.gl/tFN3t6](http://goo.gl/tFN3t6)

## Workforce Context

Oregon is using a new definition of STEM, based on the 2013 Brookings Institute “The Hidden STEM Economy” ([goo.gl/vryvaY](http://goo.gl/vryvaY)) and the consensus of the STEM Investment Council. This new definition is based on an occupational skills database, O\*NET.

- Under the old STEM definitions aligned to the Bureau of Labor Statistics and their historical record, about one in ten Oregon jobs was STEM (2014)

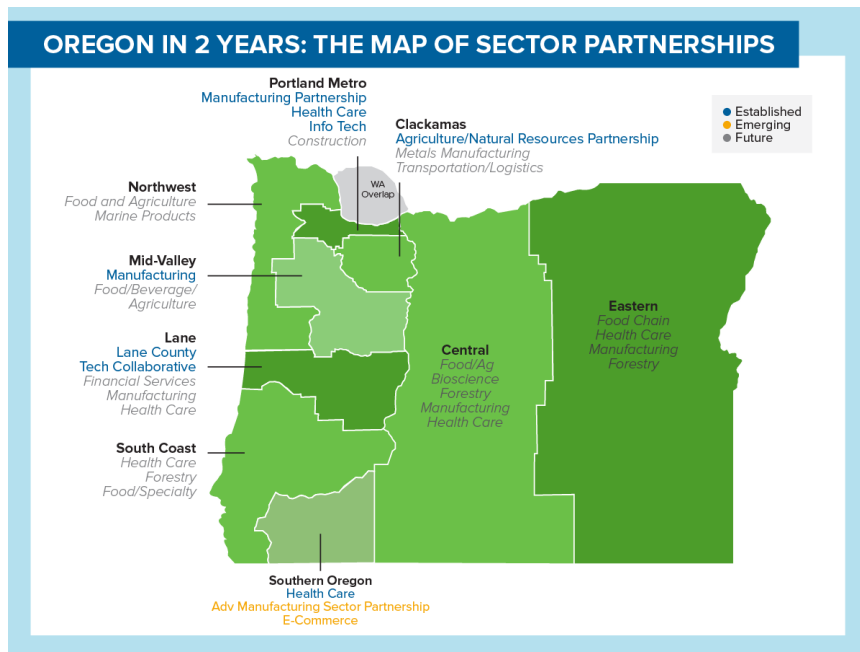


These occupations and job openings pay more than the state median wage; are growing more than other occupations in Oregon; and are growing more in Oregon than in the rest of the country.

In a parallel effort, the **Oregon Talent Council's Oregon Talent Plan** has defined Key Professional and Technical Occupational Clusters for investment ([goo.gl/3JW000](http://goo.gl/3JW000)). These 10 clusters group into:

- High growth, high demand
- Mission Critical
- Emerging.

Four of these clusters require excellent grounding in Computer Science, three require at least good programming skills for operation of equipment and instrumentation. Two of the healthcare clusters may require good technical skills for use of data and instruments.



**Oregon Workforce Investment Boards** are moving towards Sector Partnerships which tie Career Pathways systems to Industry Clusters (particularly slides 12 and 31) -- [goo.gl/8MdTlf](http://goo.gl/8MdTlf)

**White House:** Techhire Initiative -- [goo.gl/OMmssQ](http://goo.gl/OMmssQ) Portland is one of the first wave of Techhire communities, based in part on Code Oregon -- <http://codeoregon.org/>

### Population Context

- Western Interstate Commission for Higher Education: Knocking at the College Door, Oregon -- [goo.gl/X2DHTl](http://goo.gl/X2DHTl) - WICHE projects an 18% increase from 2009 to 2028 in high school seniors who are not White non-Hispanics.
- Finding highly localized stats, such as school age children in a county
  - Greater Portland Pulse -- <http://portlandpulse.org/>
  - KidsCount -- [goo.gl/ZxPPa2](http://goo.gl/ZxPPa2)
  - US Census QuickFacts -- <https://goo.gl/NOEfMp>

### Educational Context and Supports

- Chief Education Office STEM/CTE -- [goo.gl/wVdggp](http://goo.gl/wVdggp)
- NGSS Engineering Practices -- [goo.gl/OlrHNL](http://goo.gl/OlrHNL)
- ACM K-12 Standards (**currently in revision, open for public comment until June 29, 2016** -- <https://k12cs.org/> )
- STEM Beyond the Bell from OregonASK -- <https://oregonask.org/stem/>
- Professional Development and resources
  - Oregon Computer Science Teachers Association -- <http://oregoncsta.org>
  - Code.org -- <https://code.org/>
  - Google CS Education -- <https://www.google.com/edu/cs/>
- Earning College Credit in High School (one exemplar) -- <http://stemoregon.org/jumpstart/>
- Oregon Public and Private Community Colleges, Colleges and Universities
  - Higher Education Coordinating Commission list of campuses -- [goo.gl/BrCn8C](http://goo.gl/BrCn8C)
  - Alliance of Independent Colleges -- <http://oaicu.org/>

Respectfully submitted,  
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