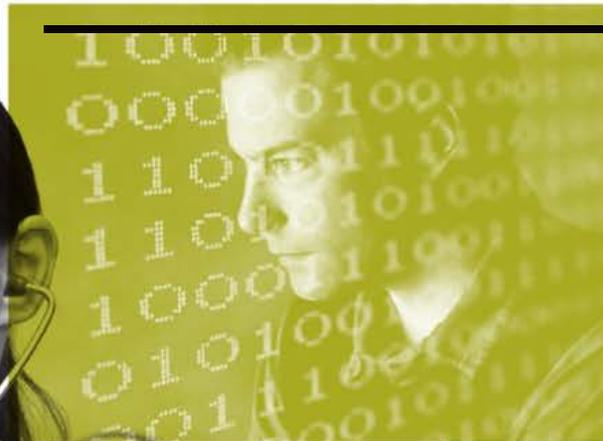

Creating Vibrant Futures Through STEM Education



Science / Technology / Engineering / Mathematics



Science Technology Engineering Math

www.spokanestem.org / 509.321.3625

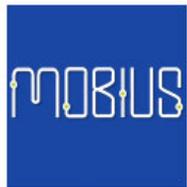


Spokane STEM:

**What We Are &
What We Do**



Spokane STEM



Spokane Area
Workforce Development Council



Science / Technology / Engineering / Mathematics

www.spokanestem.org / 509.321.3625



Our Mission:

Serve as a catalyst for STEM learning and innovation throughout the community

Our Vision:

Transforming the way we think, learn, work, and live through STEM



What is STEM Education?

You May Be a Little Surprised!



STEM – The Simple Definition

Science

- Life, Physical and Health Sciences

Technology

- Information Technology and Software

Engineering (and Architecture)

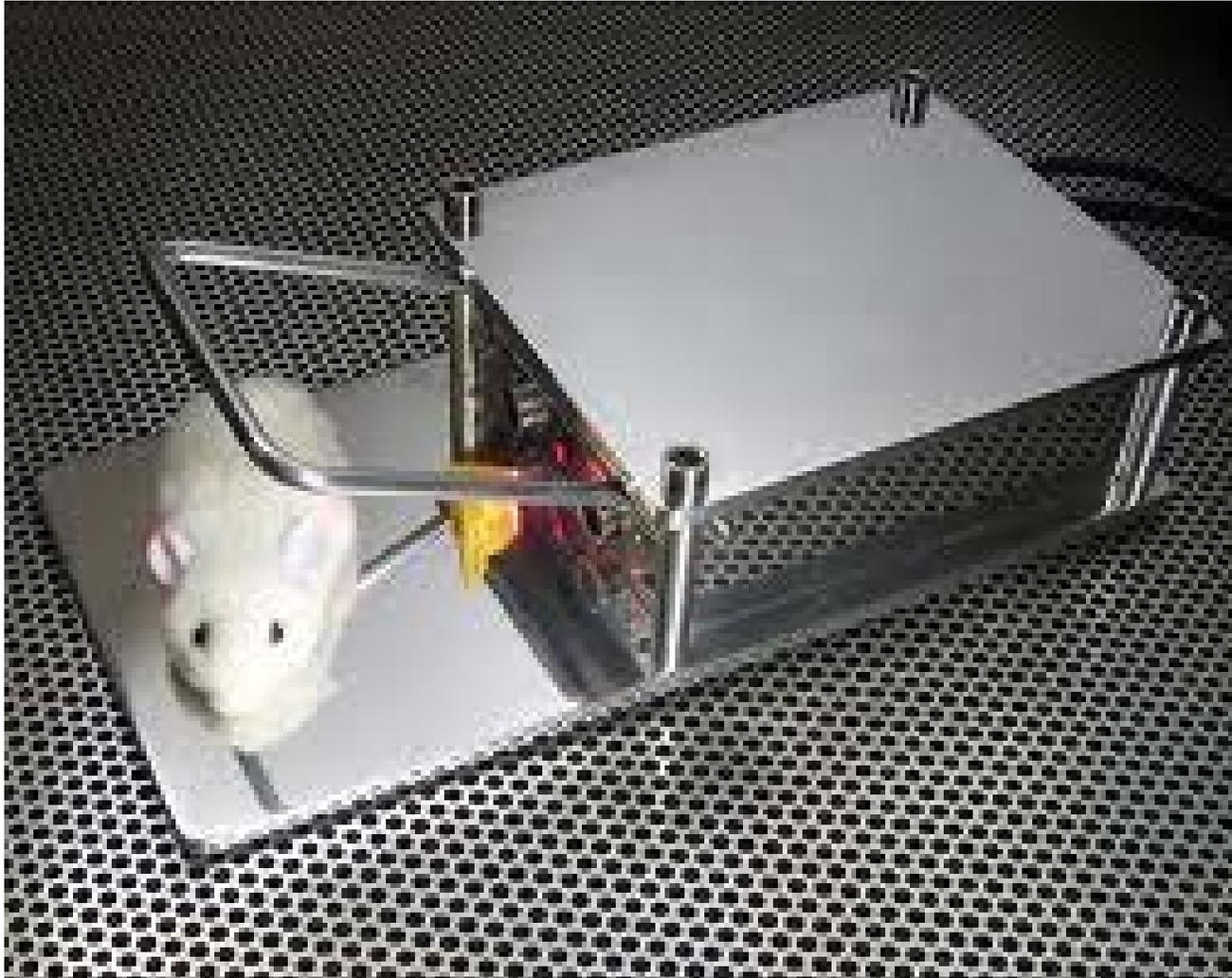
Mathematics



Science / Technology / Engineering / Mathematics

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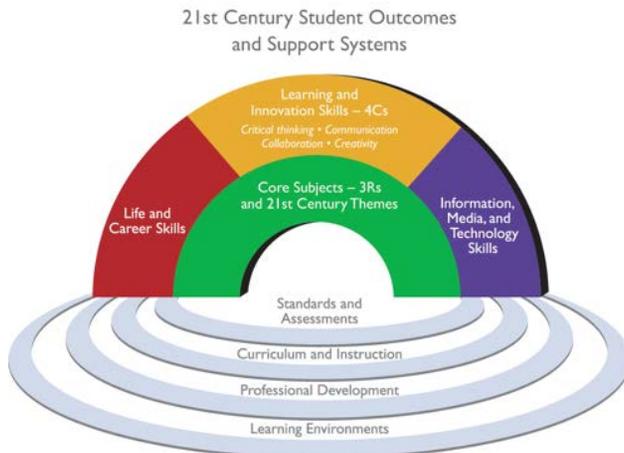
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STEM Is Also Tied to Acquisition of 21st Century Skills...



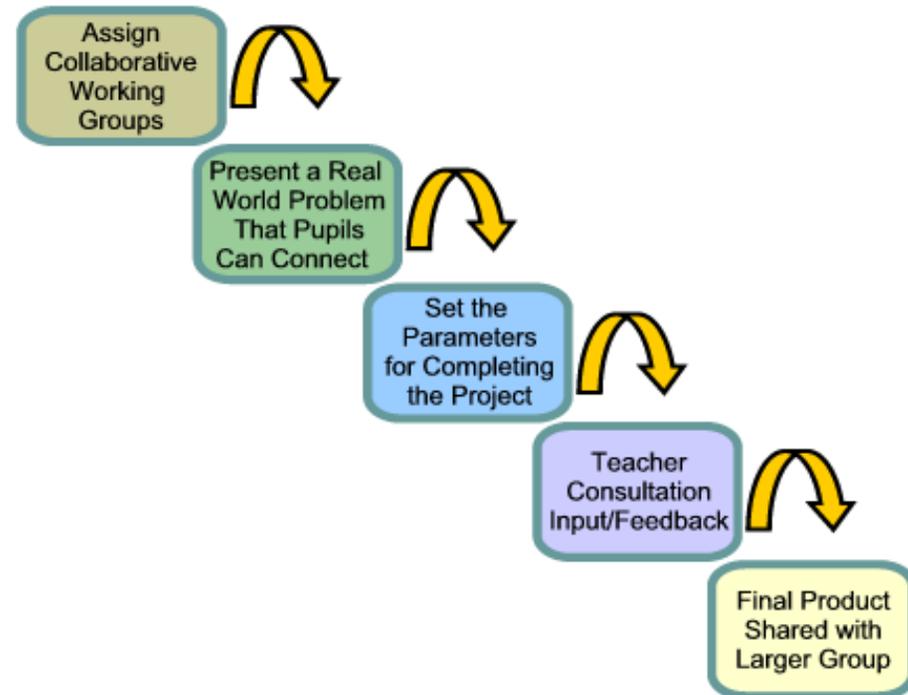
- **Learning Core Subjects with 21st Century Themes**
- **Learning and Innovation Skills**
- **Information, Media, and Technology (Functional and Critical Thinking) Skills**
- **Life and Career Skills**

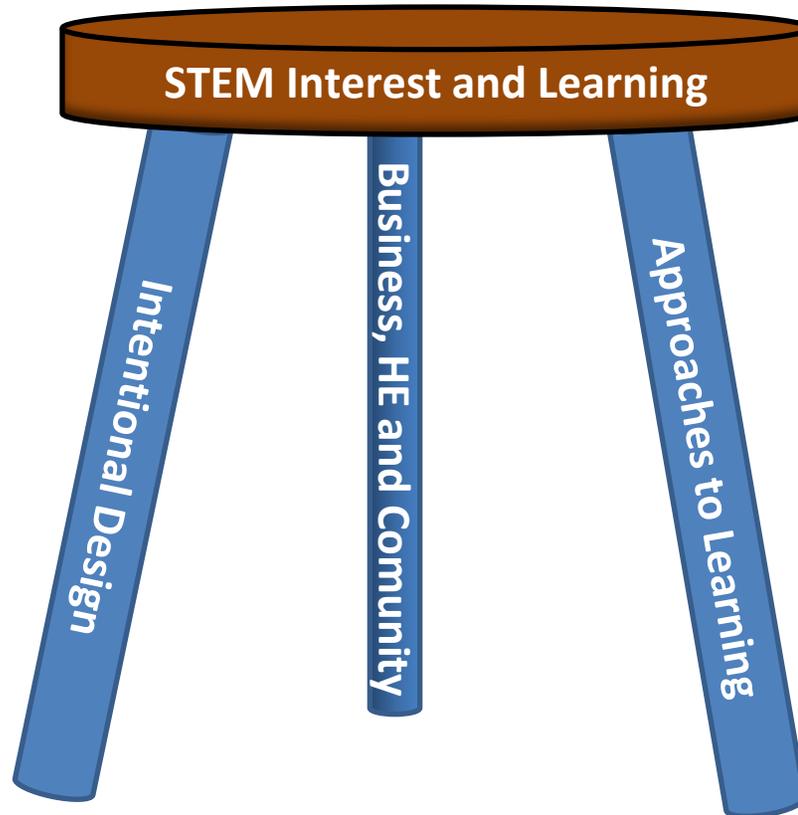


Successful STEM Education is also Project-Based



Project-based Teaching Strategy







Why STEM Is So Important:

Creating A Workforce for Tomorrow's Jobs





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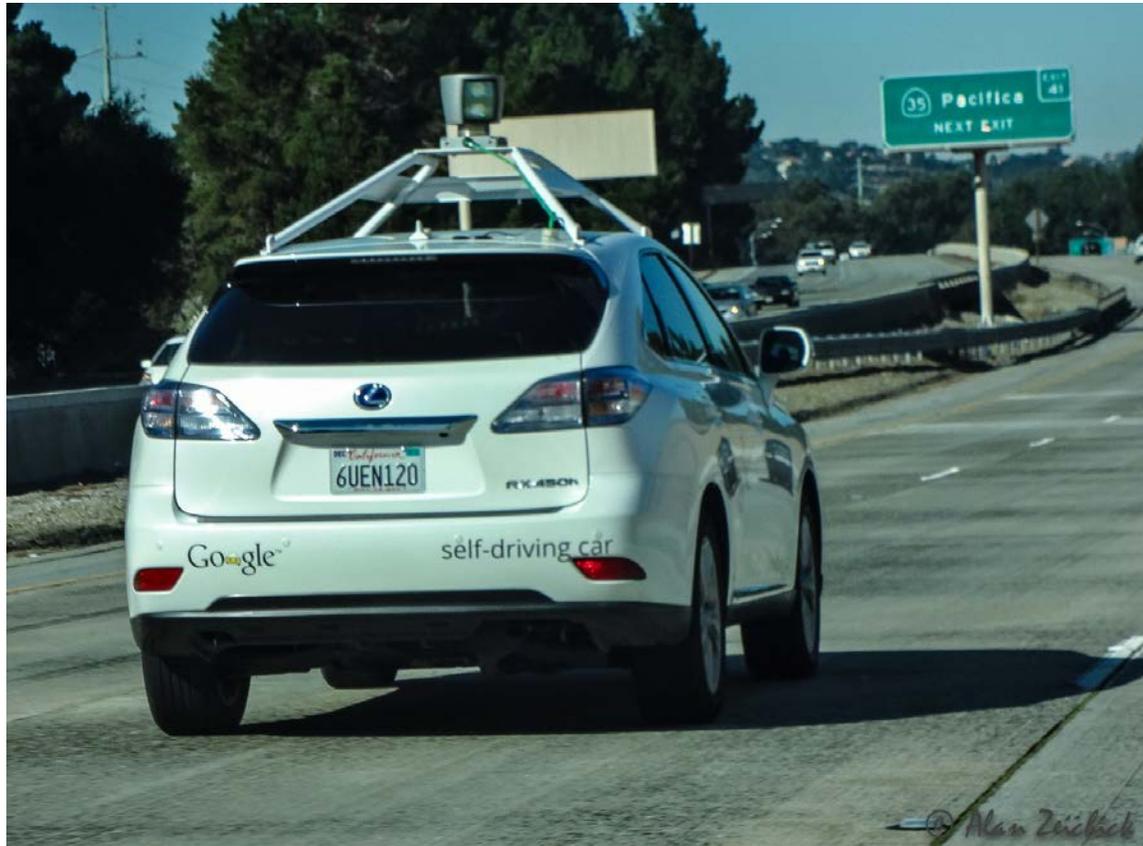




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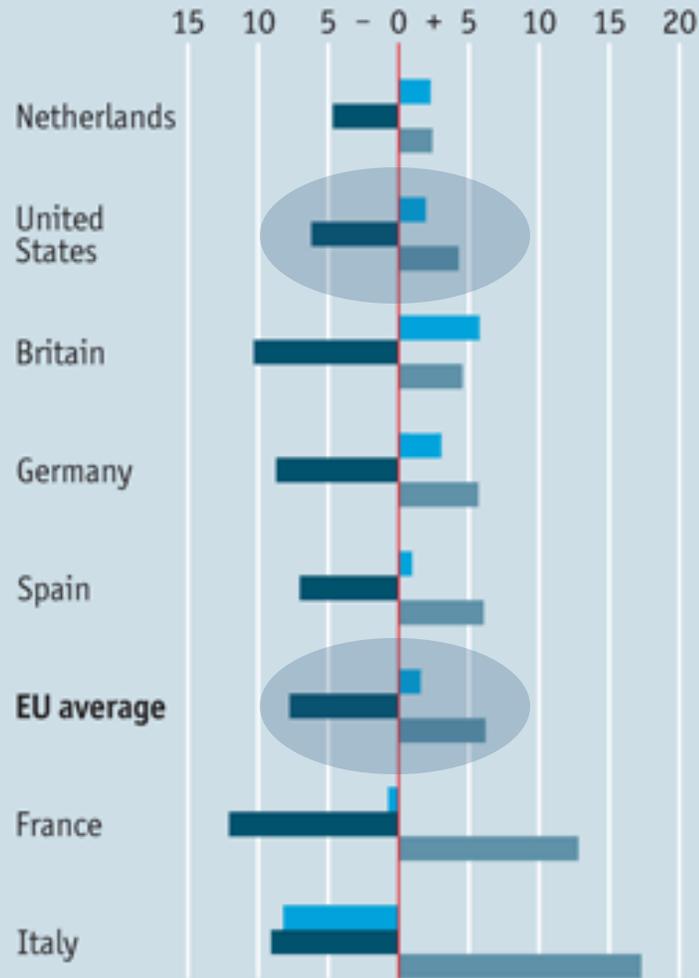




The disappearing middle

Share of total hours worked, change between 1993 and 2006, percentage points

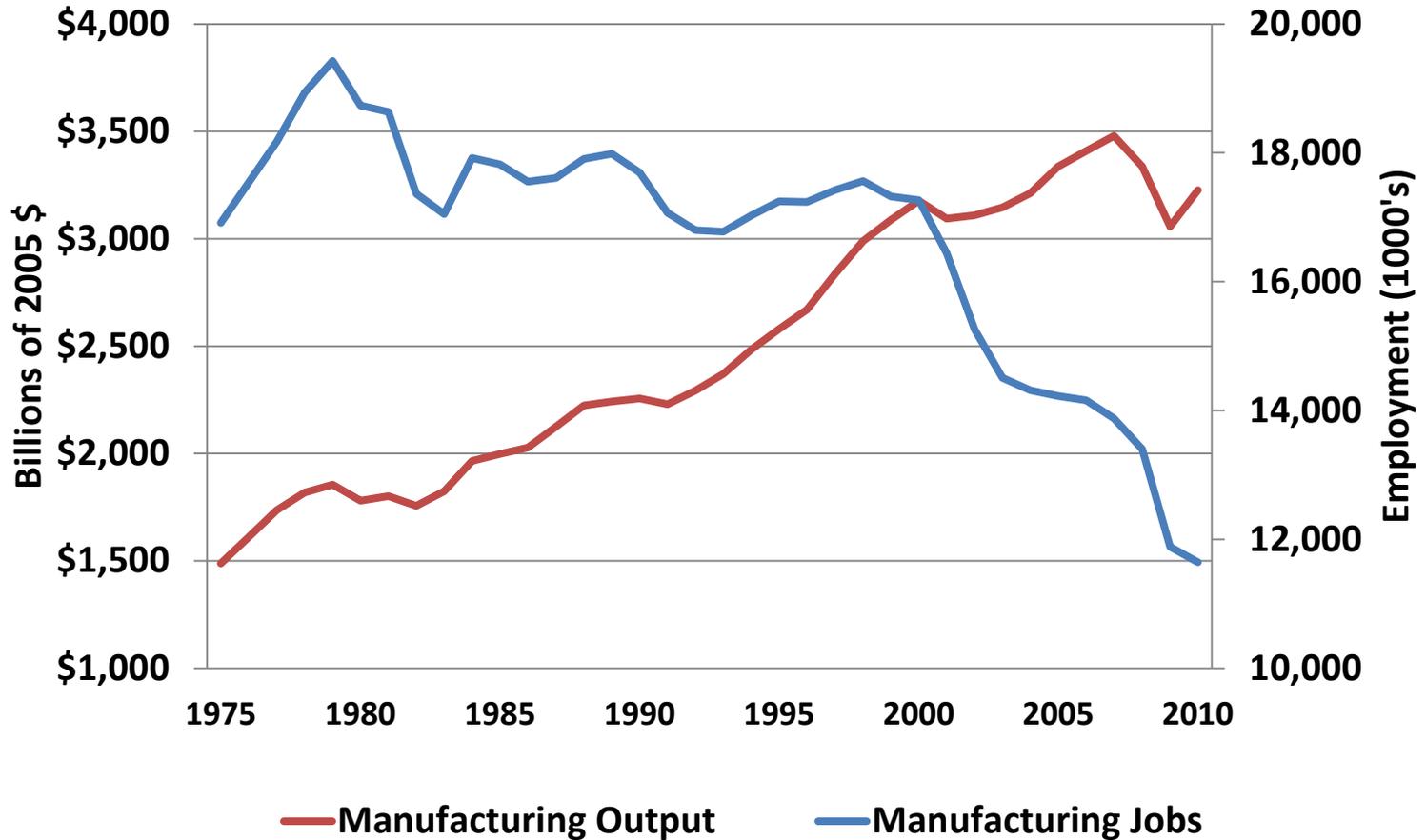
■ Lowest-income occupations
 ■ Middle-income occupations
 ■ Highest-income occupations



Source: "Job Polarisation in Europe", by Maarten Goos, Alan Manning & Anna Salomons, *American Economic Review*, 2009



U.S. Manufacturing: Output vs Jobs Since 1975



Source: Federal Reserve, Bureau of Labor Statistics

Produced by: Veronique de Rugy, Mercatus Center at George Mason University

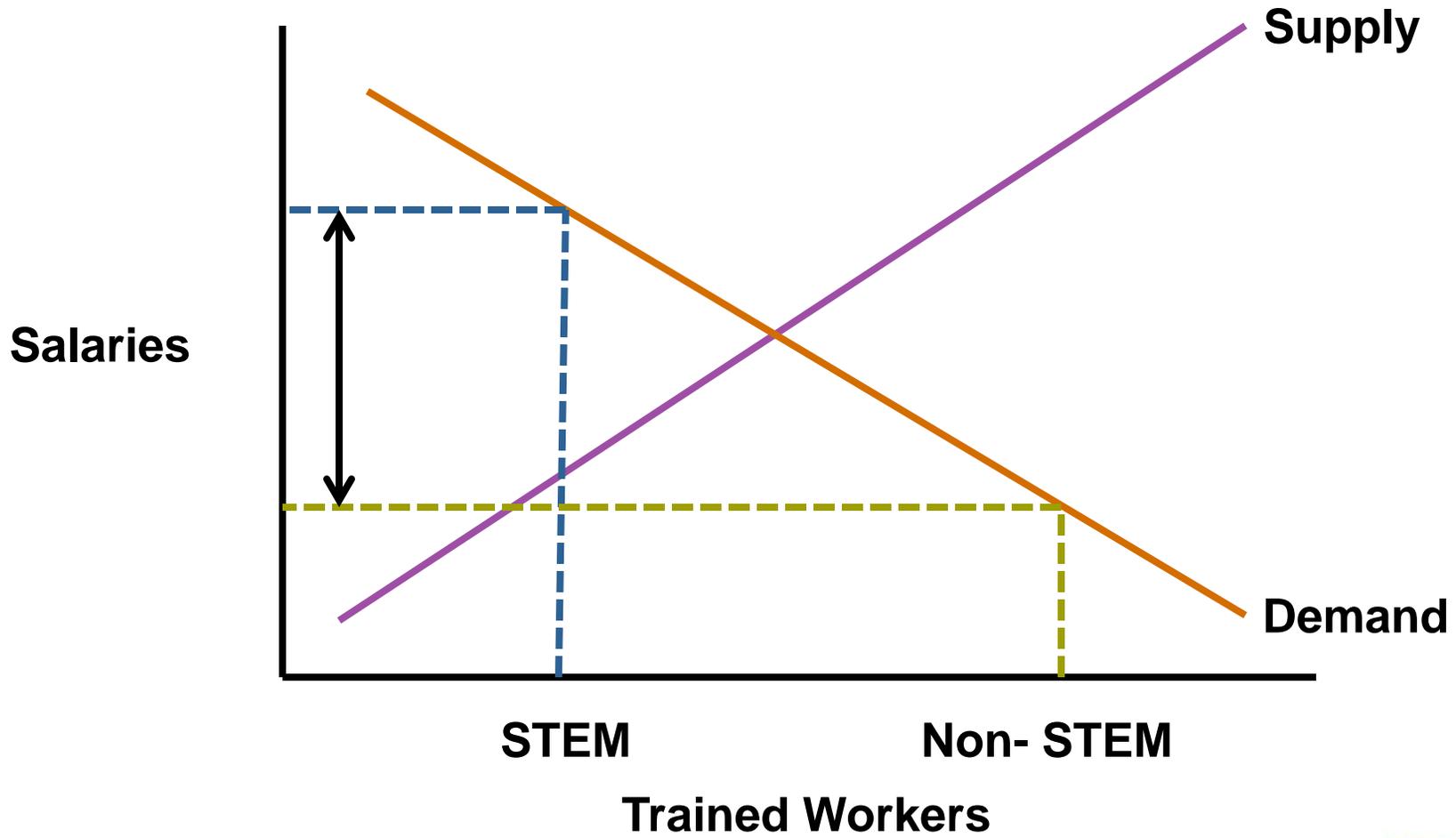




***Among the 10 most rapidly disappearing
middle-class jobs.....***

***7 are declining largely because of the
application of technology.***

Forbe's Magazine - 2011





National Demand for STEM and Non-STEM Workers (Unemployed VS Job Openings)

Non-STEM Occupations



All STEM Occupations

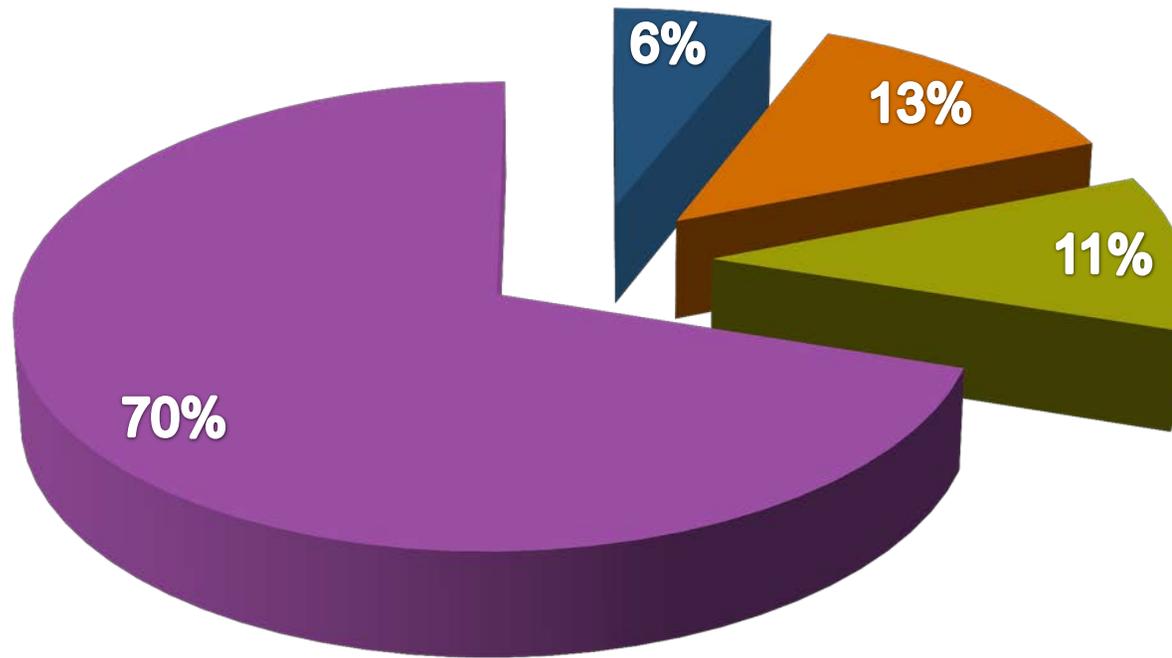


All STEM Occupations in Healthcare





The Cost of Admission into STEM Careers



- No College
- Some College
- Associate's
- BS or More

***Source: Carnevale, et al. 2011,
Georgetown University***



STEM Employment Drives Economic Development

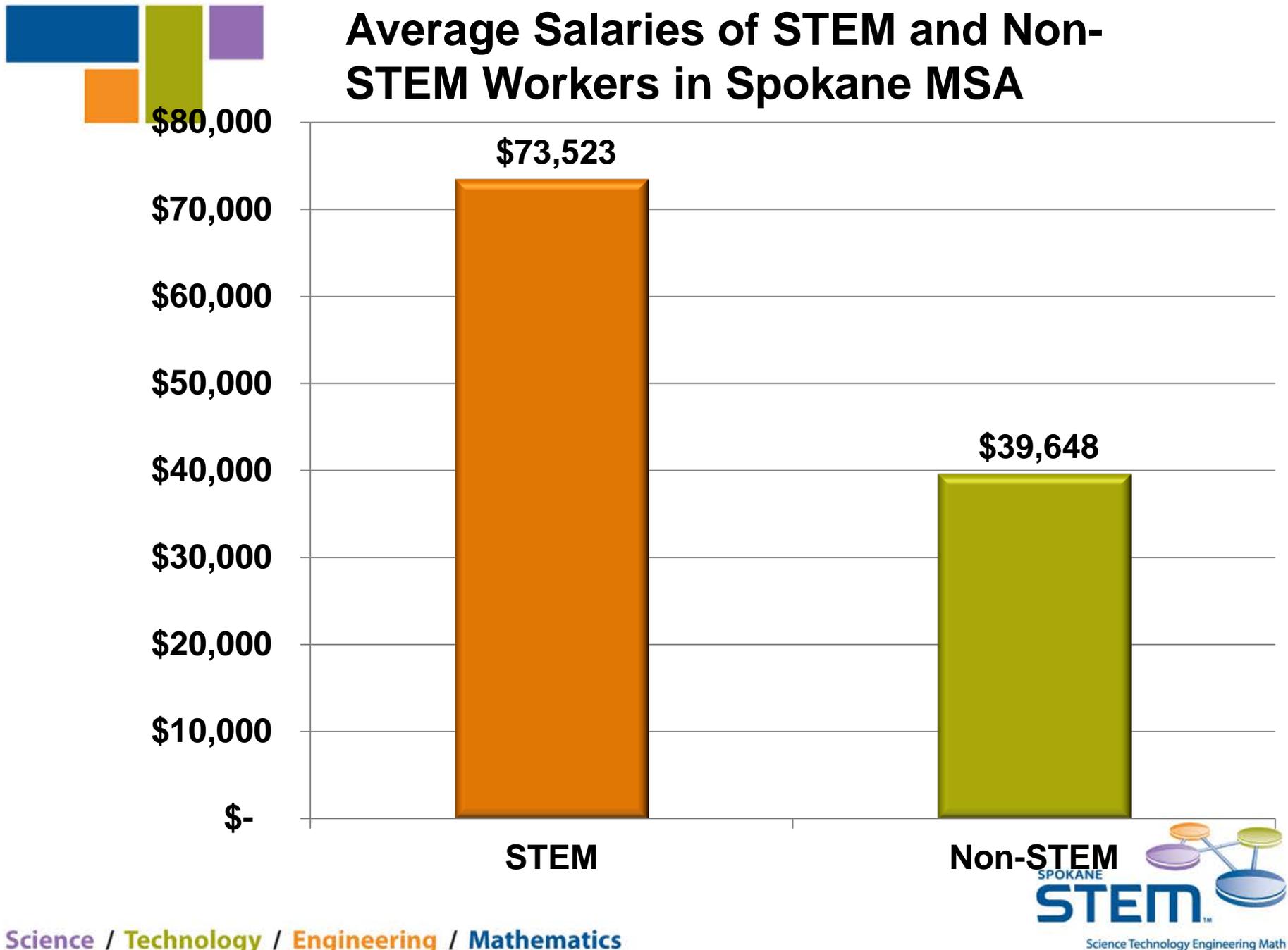


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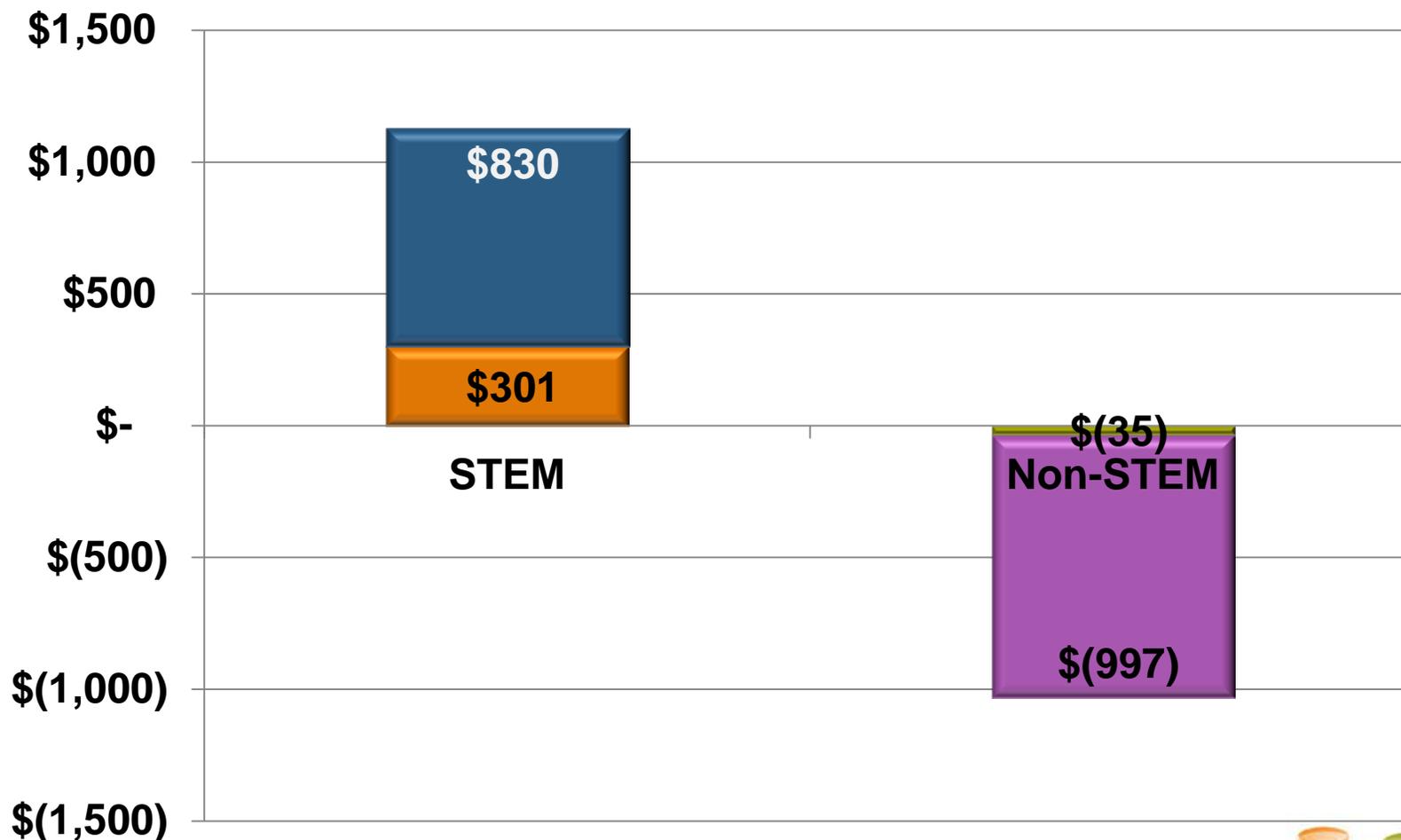


Average Salaries of STEM and Non-STEM Workers in Spokane MSA





Effect on Average Salary When 1% Employment is Added in STEM and Non-STEM Sectors





How Does Spokane Compare to “Peer” Communities?



Selecting Peers

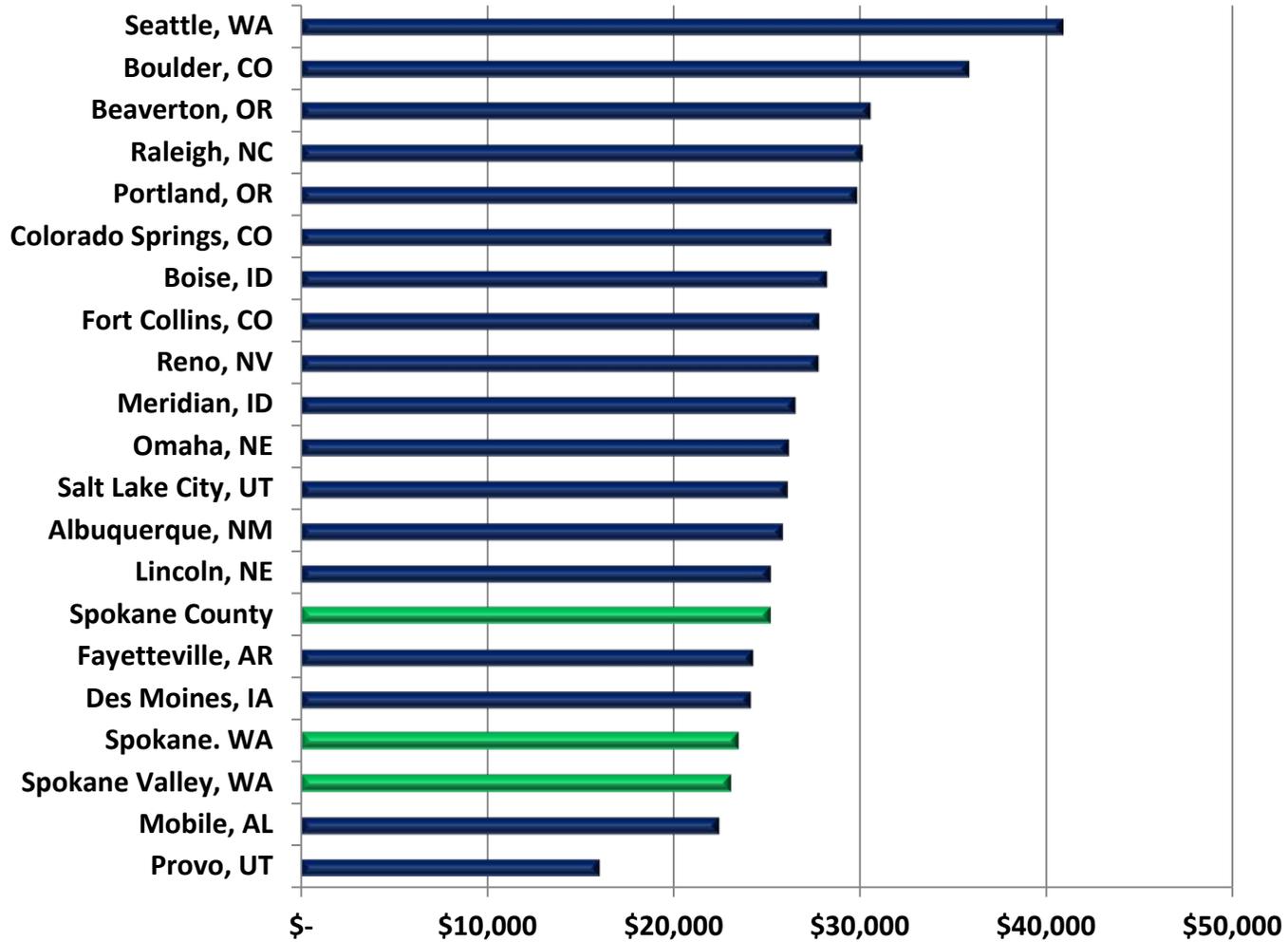
- **Regional Metropolitan Areas**
- **Greater Spokane Inc. Peers**
- **Forbe's Magazine Best Places to Do Business List**



Income and Employment

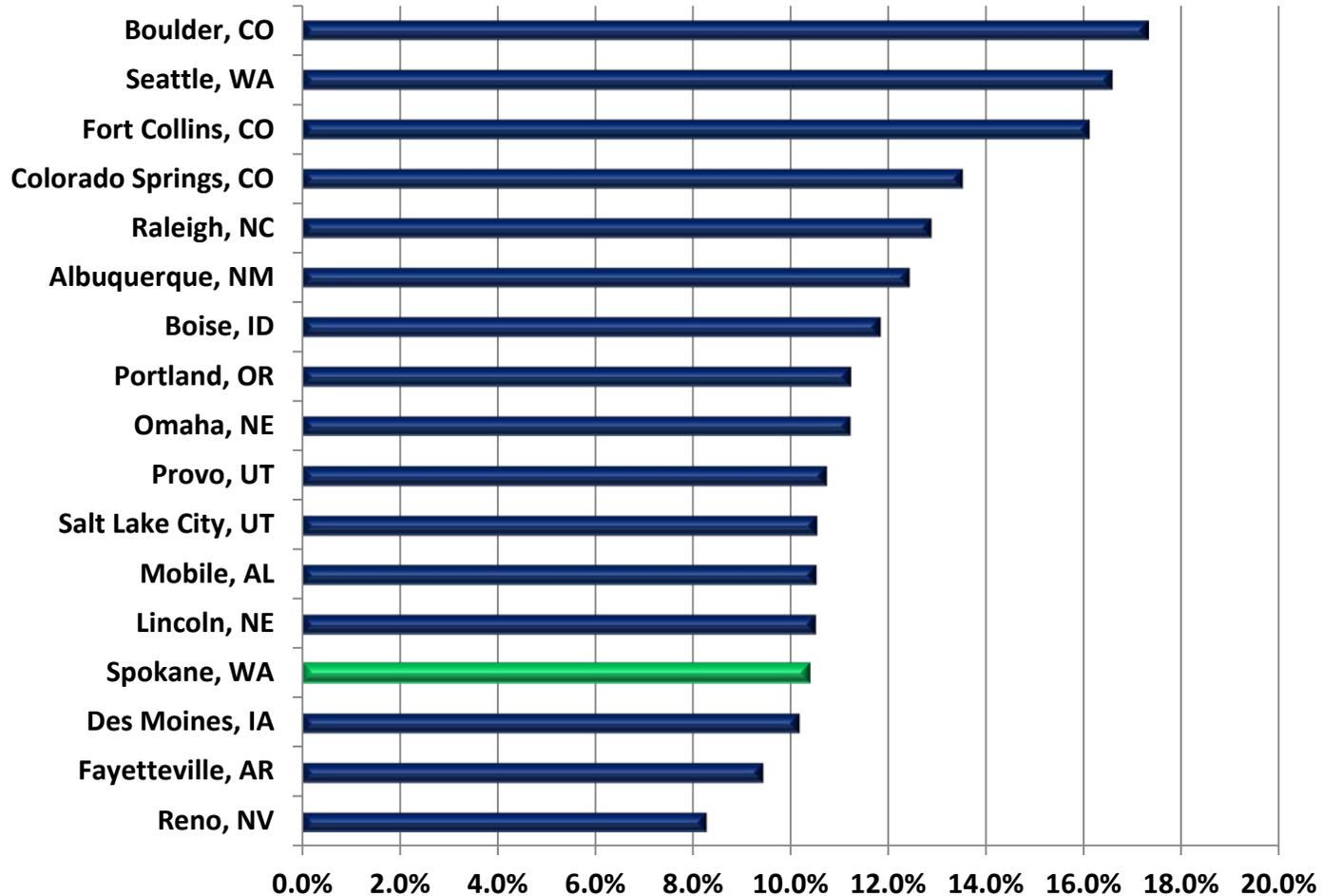


Per Capita Income



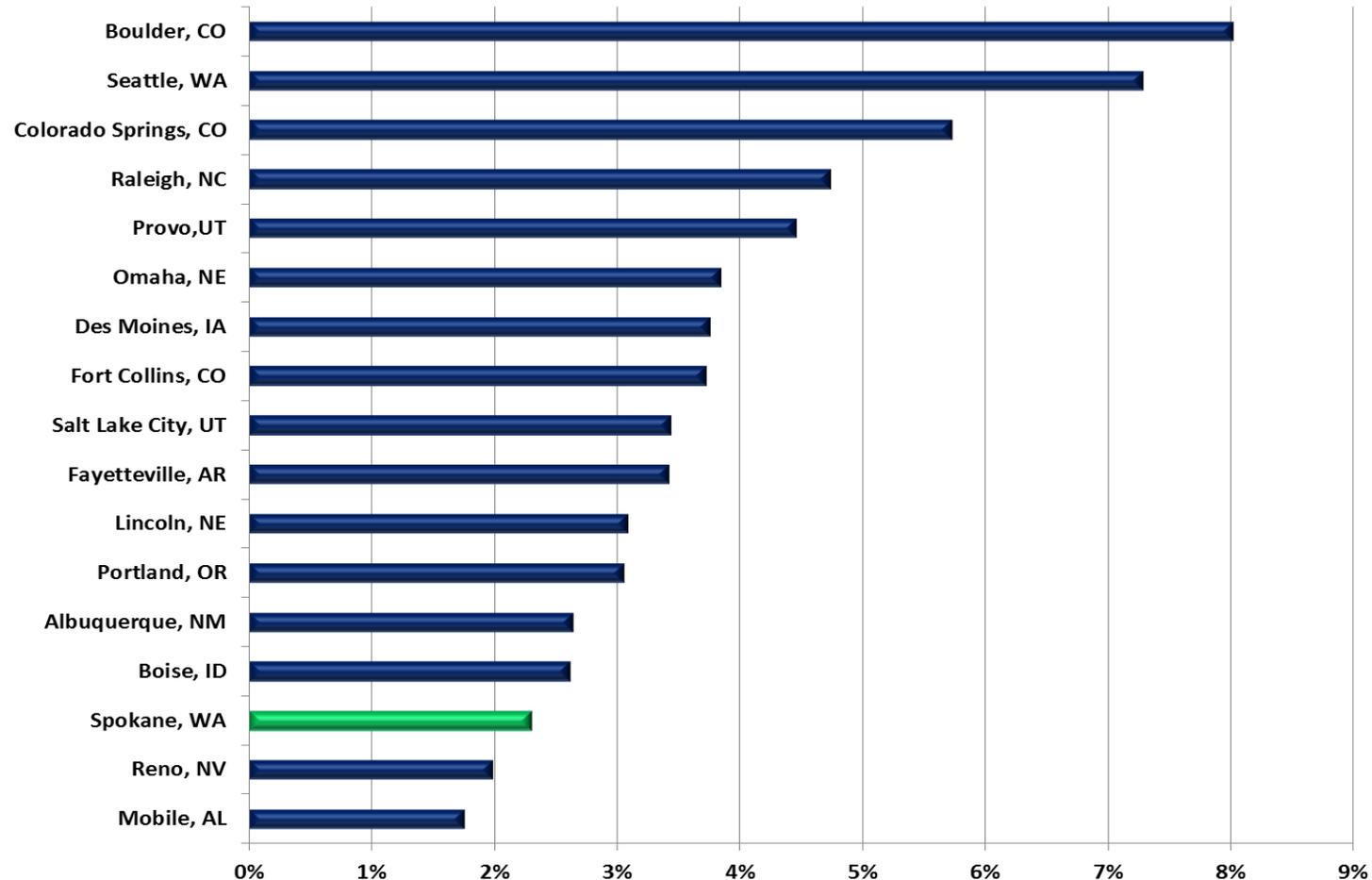


% of All Jobs In STEM Occupations



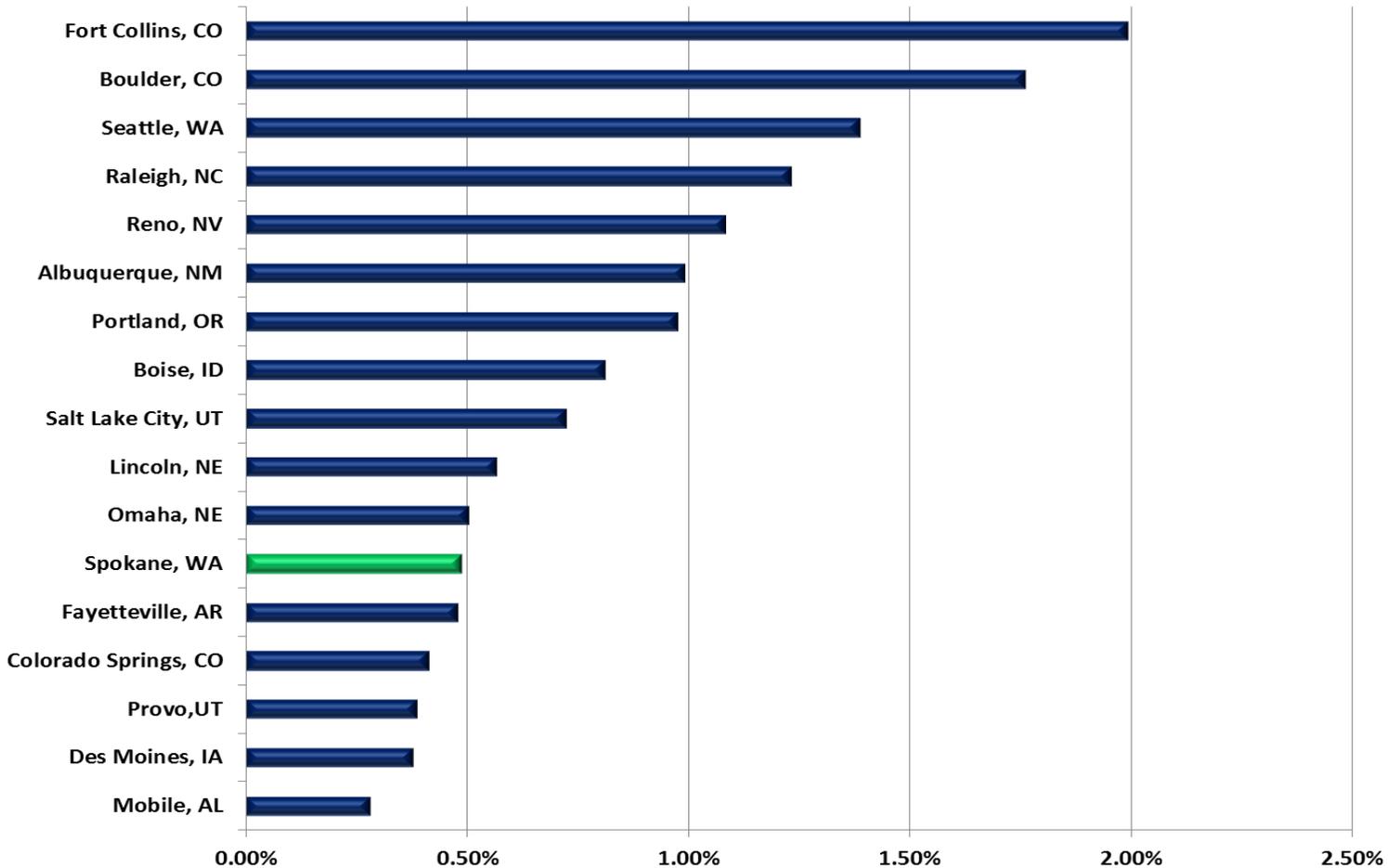


% of All Jobs in Computer and Mathematics Occupations



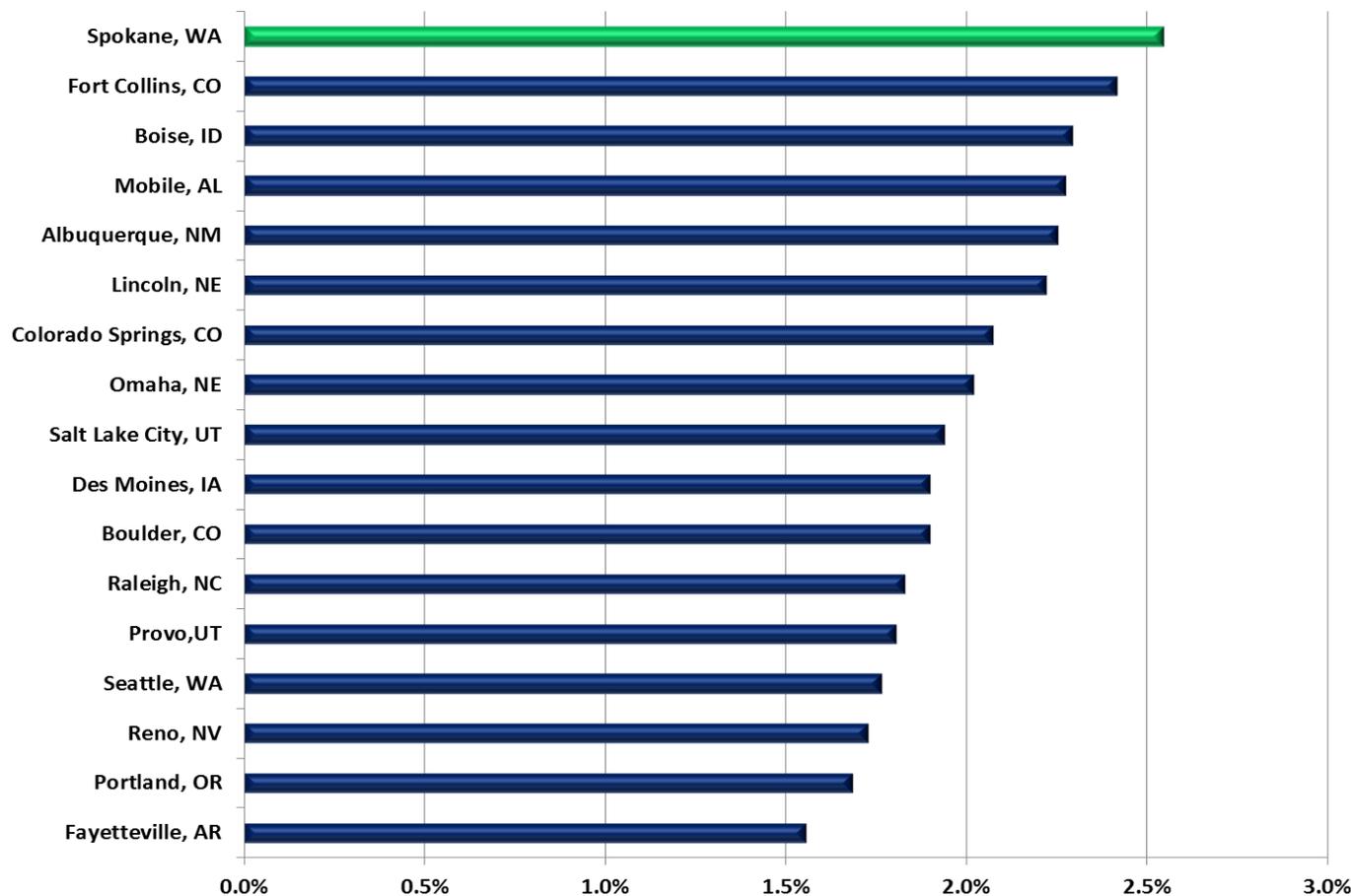


% of All Jobs in Physical and Life Sciences Occupations





% of Jobs Held by Health Technicians and Technologists

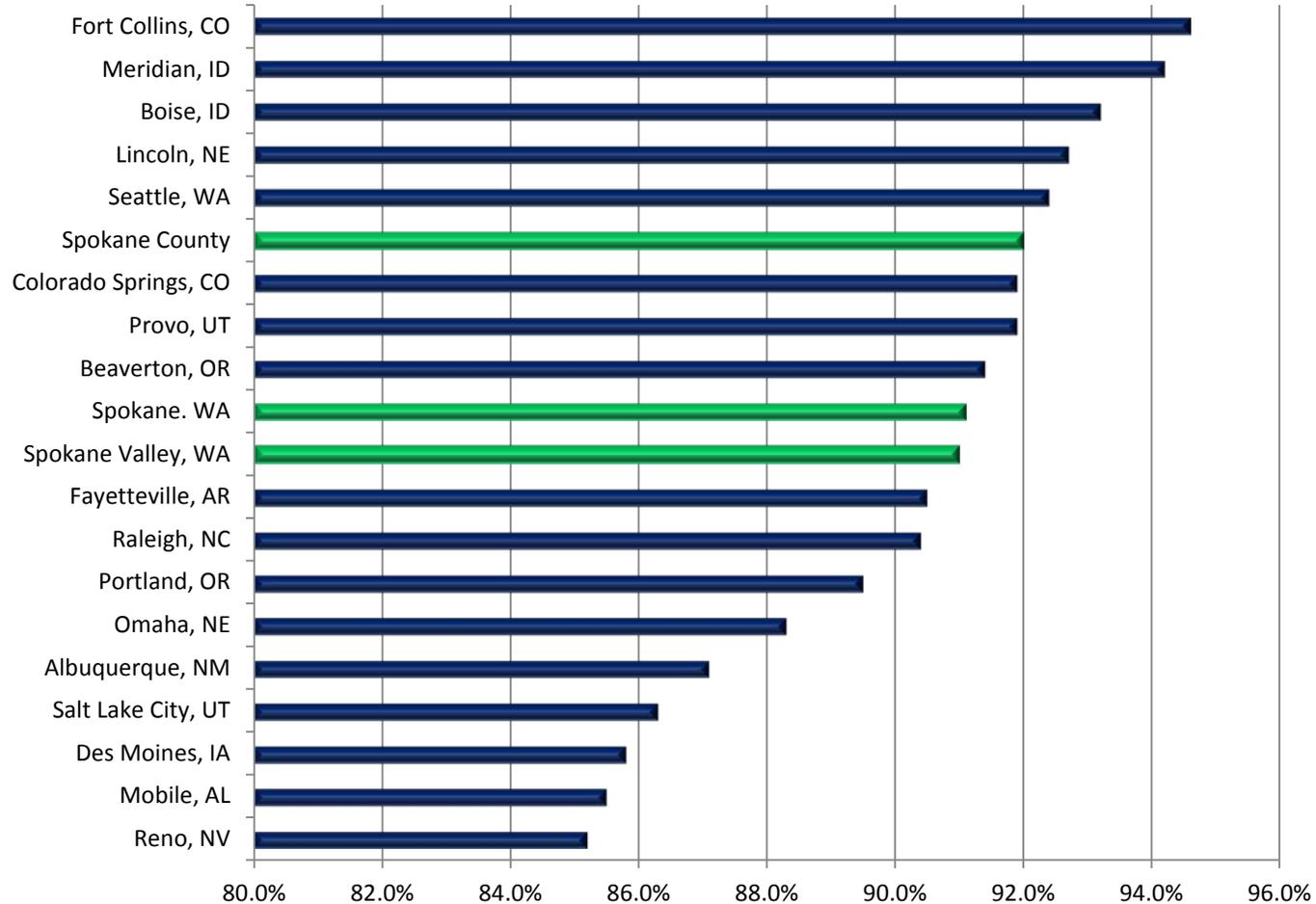




Educational Attainment

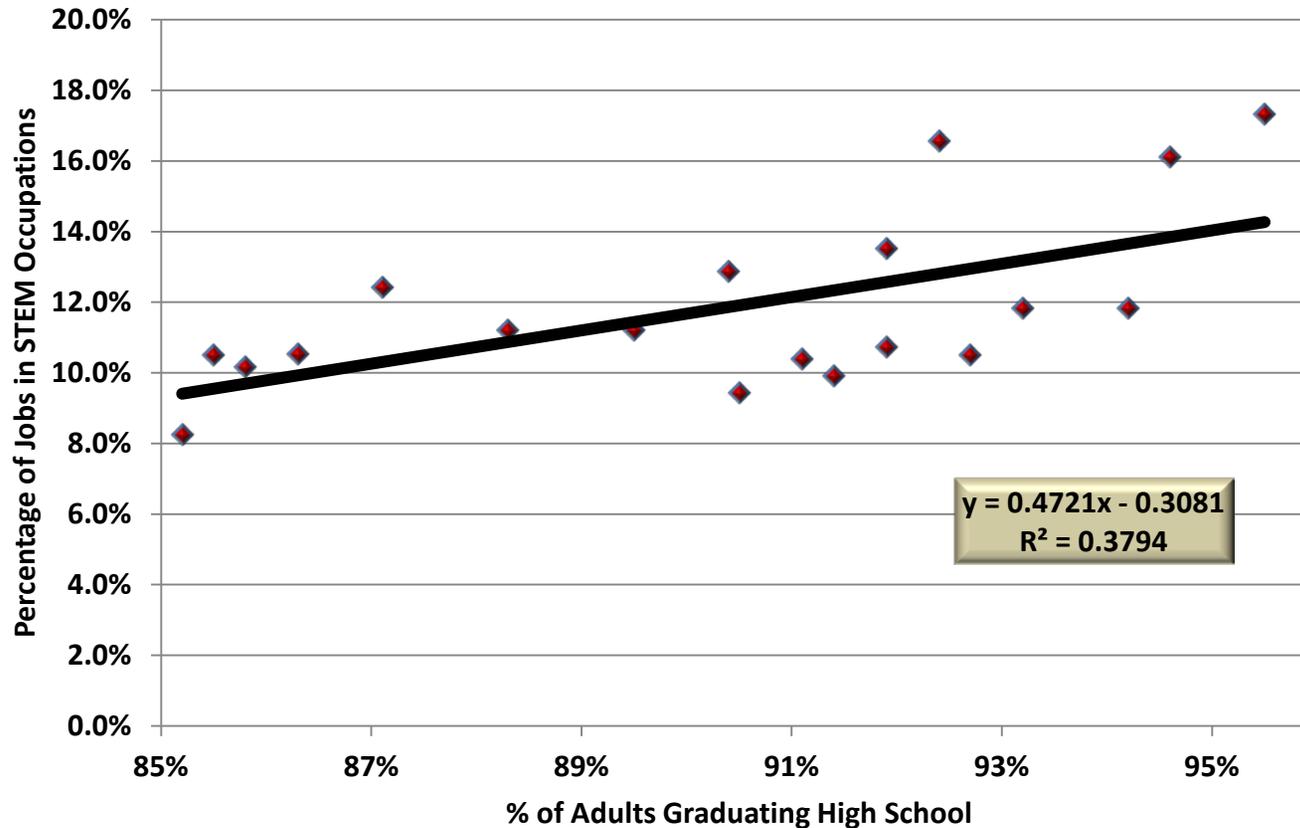


Percentage of Adults Completing High School



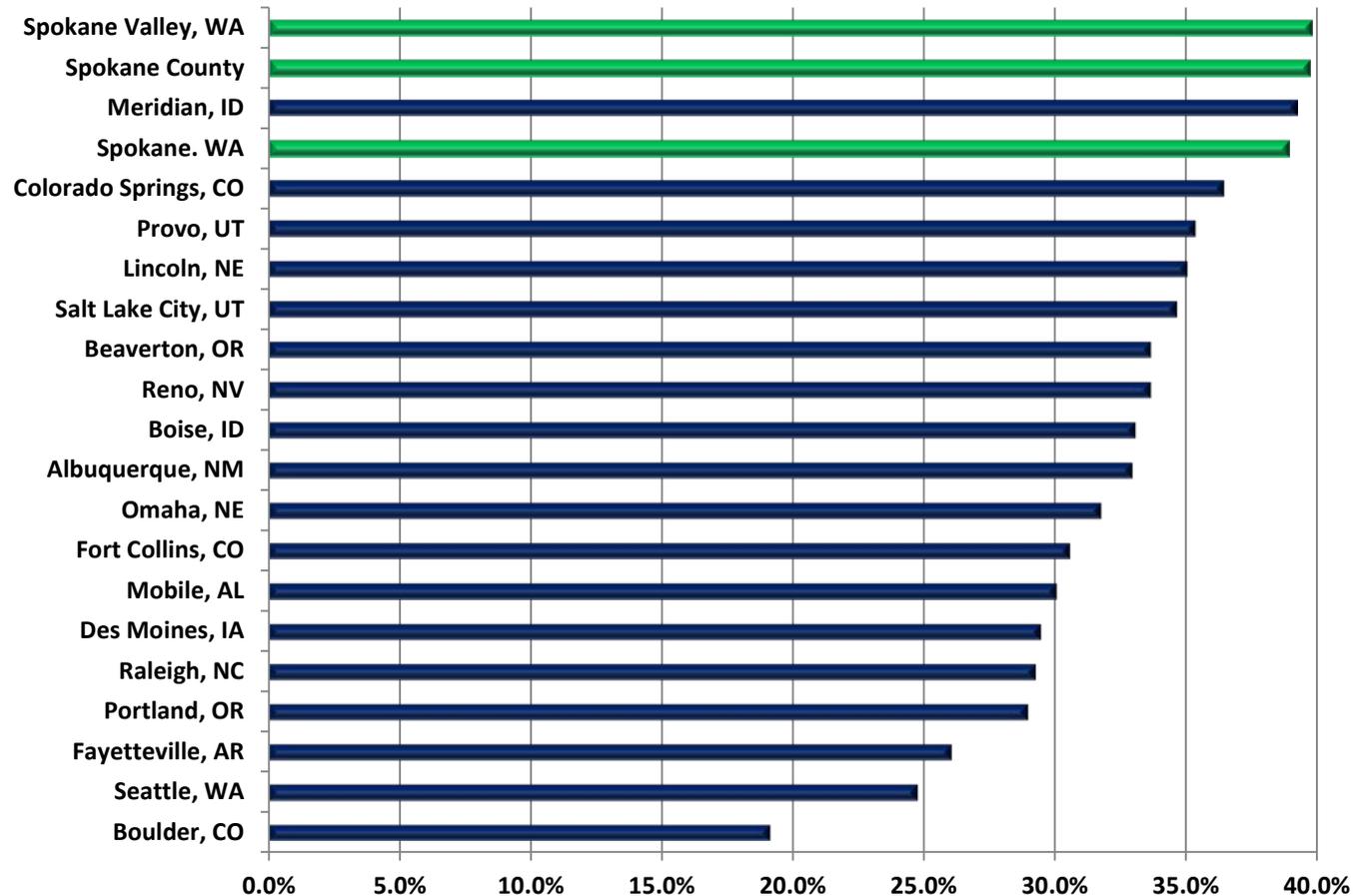


Relationship between % of Adults Graduating HS and % Jobs in STEM



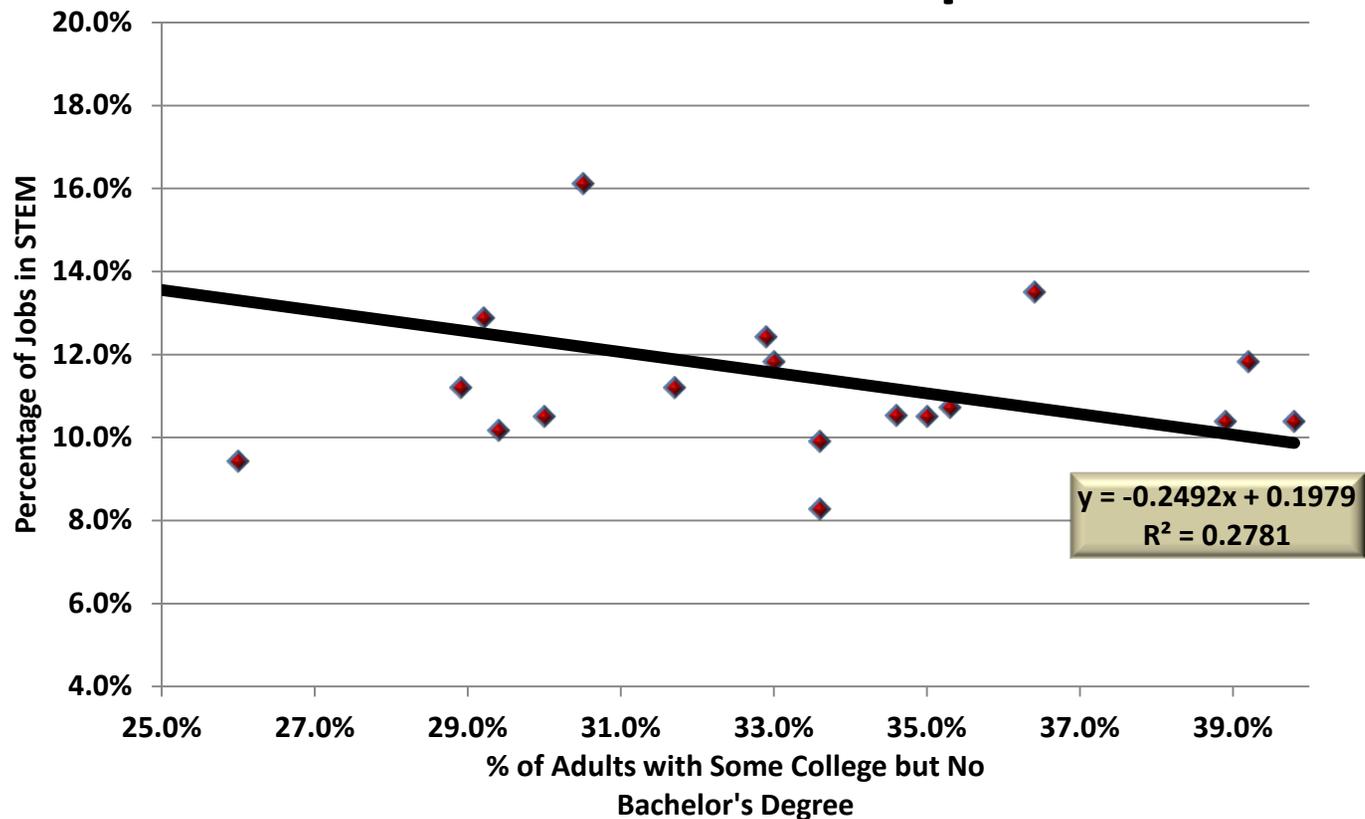


Percentage of Adults with Some College but No Bachelor's Degree



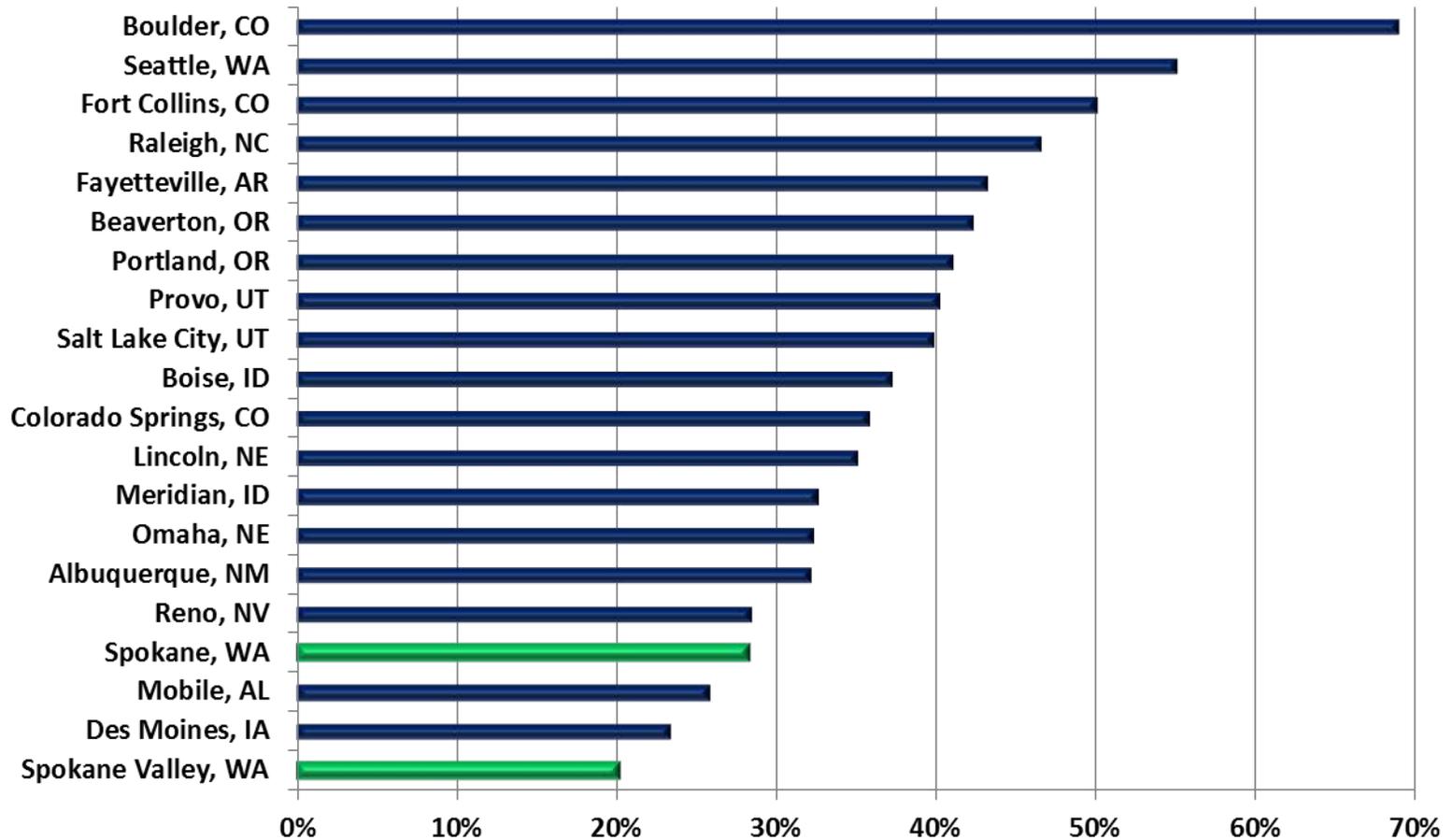


Relationship Between % with Some College but No Bachelor's Degree and % Jobs in STEM Occupations



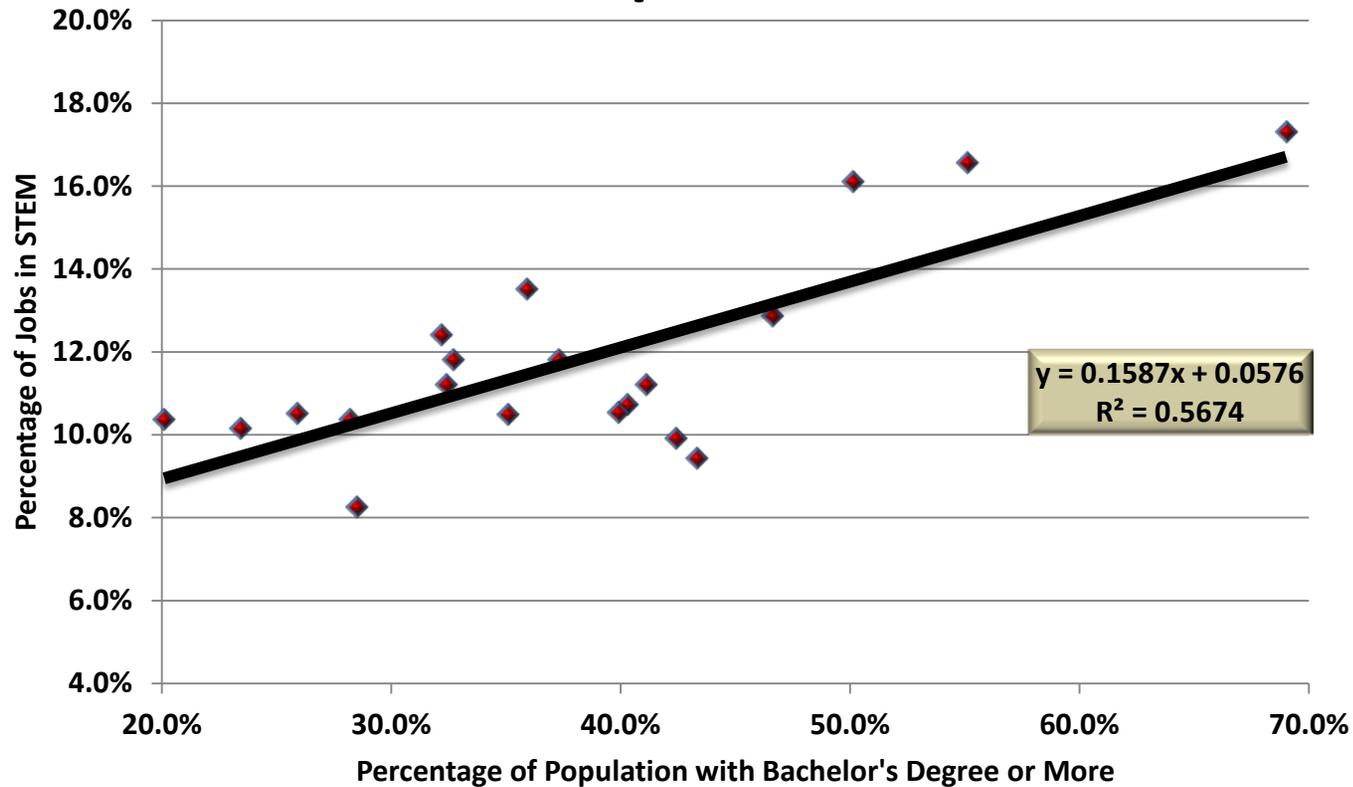


Percentage of Adults with at Least a Bachelor's Degree



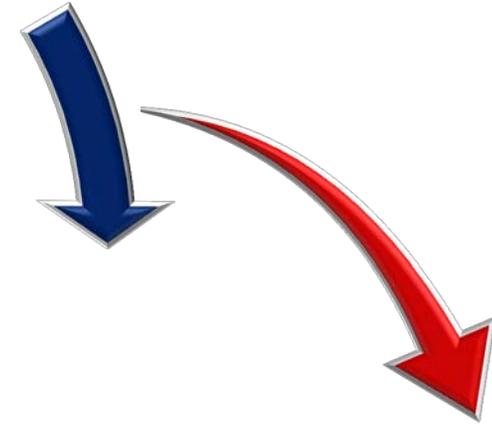


Relationship Between % with Bachelor's and % of Jobs in STEM Occupations





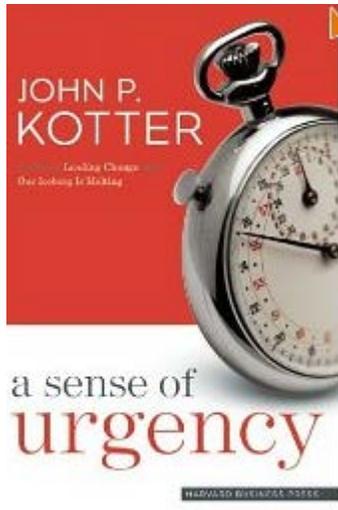
***Raised in
Spokane, Enter
Workforce in
Spokane***



***Leave
Spokane***

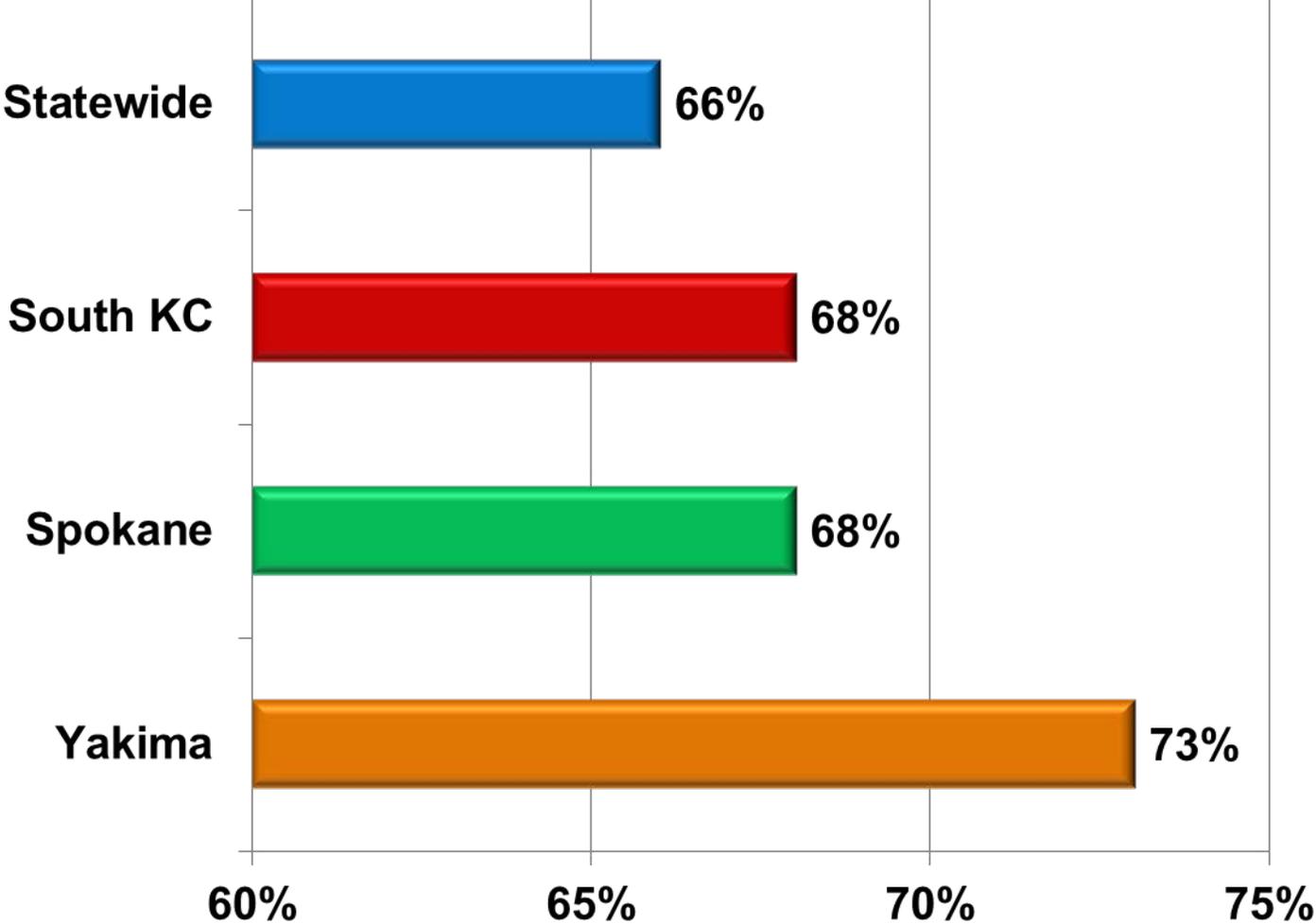
***Enter
Spokane***





1. Increase Awareness and a Sense of Urgency for Change

Percentage of Respondents Not Having Heard of the Abbreviation “STEM”





2. Rethink how STEM classes are Taught and Begin Implementing Project-based Learning and Acquisition of 21st Century Skills



3. Better Support Our Teachers to Keep Them on the Cutting Edge and Empower Them to Become Innovators in Teaching and Learning



- 4. Ensure that Students Succeed in Higher Education through Academic, Financial, and Cultural Support Mechanisms.**

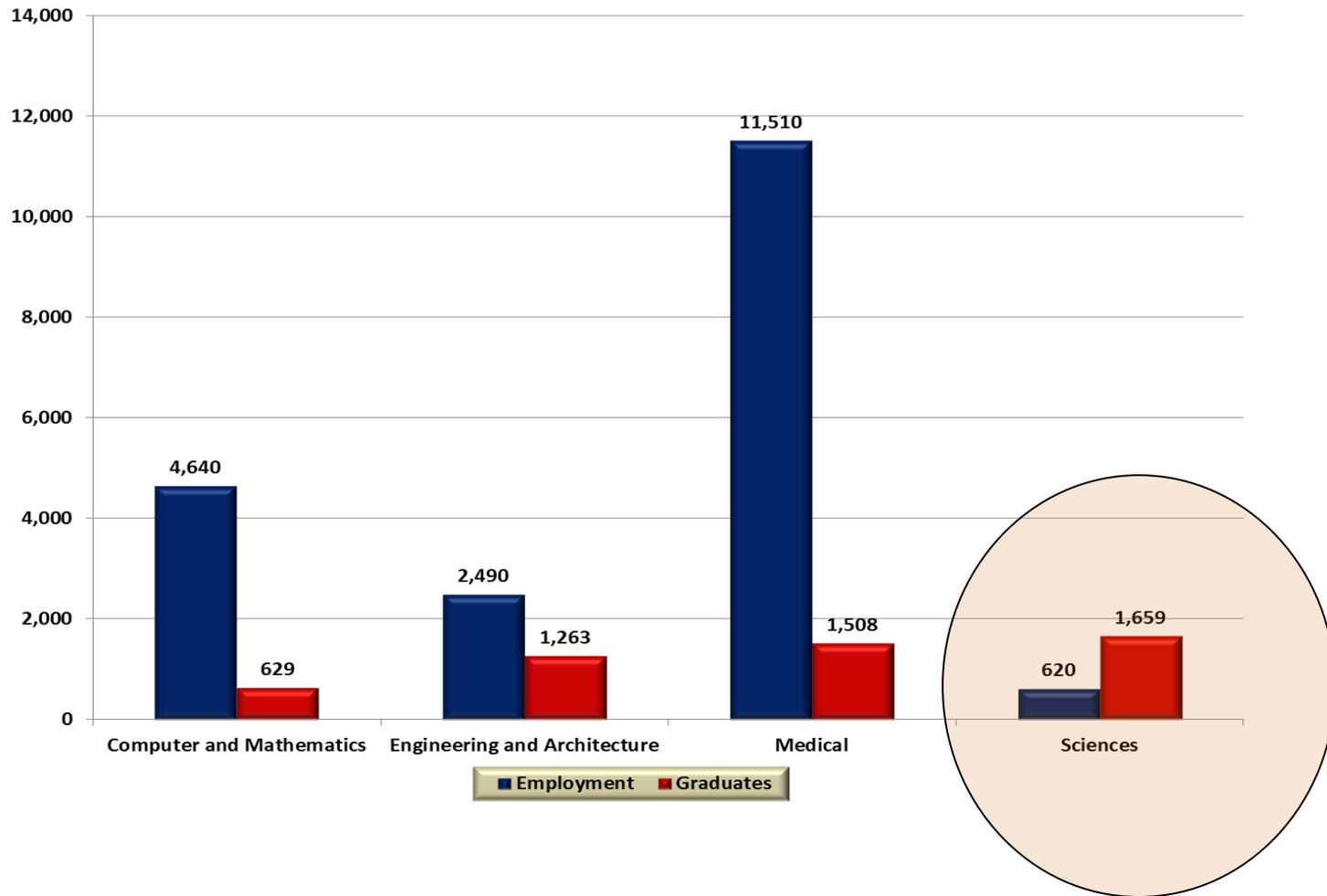


5. Better Connect Our Education Systems to the Business Community to Ensure that Education Aligns with Necessary Workplace Skills.

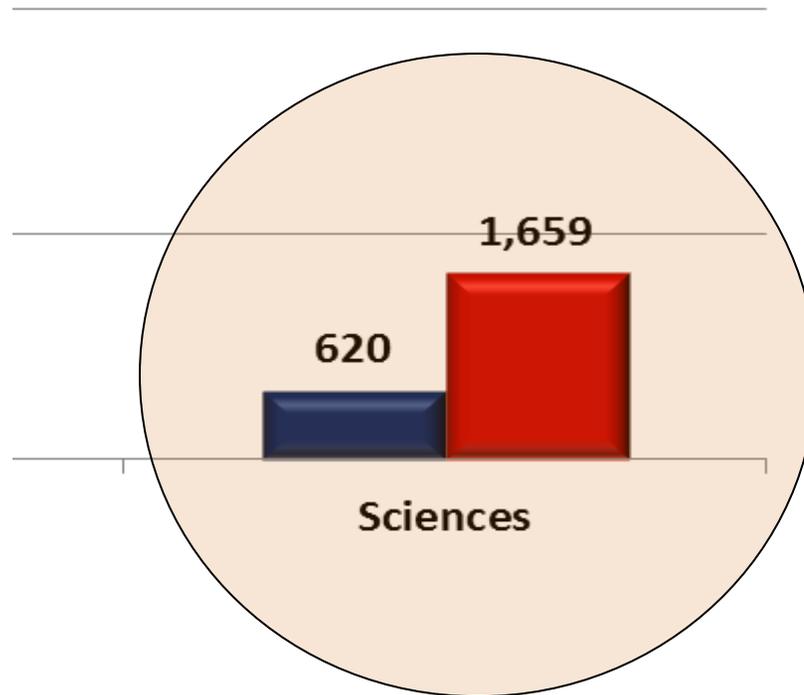


6. More Effectively Exploit Higher Education and Research Assets to Support Economic Development.

Employment vs. Annual Graduates in STEM Majors



Employment vs. Annual Graduates in STEM Majors





7. Work Together to Effectively Advocate for Changes in Policy, Law, and Funding Models to Remove Barriers to Success in Education.



“We can prosper only based on brainpower: properly prepared and properly applied brainpower.”

Thomas Friedman and Michael Mandelbaum - *That Used to be Us*