



STEM - Data and Metrics Subcommittee

MEMBERS: Lisa Graham (Chair), Jim Piro, Fred Ziari

December 17, 2014

1:30pm – 3:00pm
Portland General Electric
121 SW Salmon St.
2 World Trade Center
Mezzanine Rooms 3 and 4
Portland, OR

JIM PIRO, Chair

AUBREY CLARK

HERB FRICKE

JESSICA GOMEZ

LISA GRAHAM

DWAYNE JOHNSON

ERIC MESLOW

THOMPSON
MORRISON

FRED ZIARI

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MARK LEWIS

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AGENDA

1. Introductions

2. Background Information:

40 - 40 - 20

OEIB Scorecard

STEM Council Goals

3. Subcommittee Goals and Charge

4. STEM Supply & Demand

5. Discussion of Critical Questions and Definitions

6. Workplan Development and Next Steps

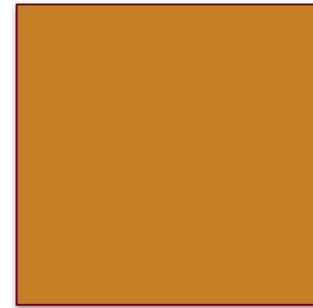
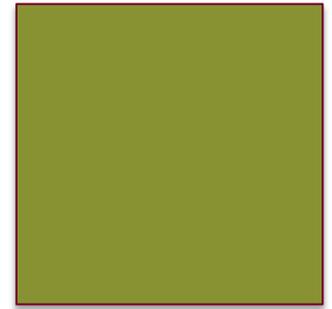
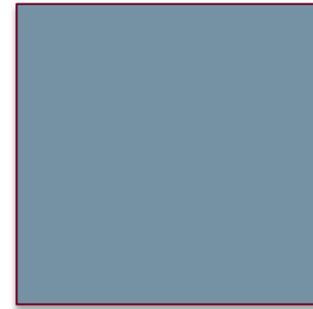
7. Public Comment

Members of the public wanting to give public testimony must sign in.

There will only be one speaker from each group.

Each individual speaker or group spokesman will have three (3) minutes.

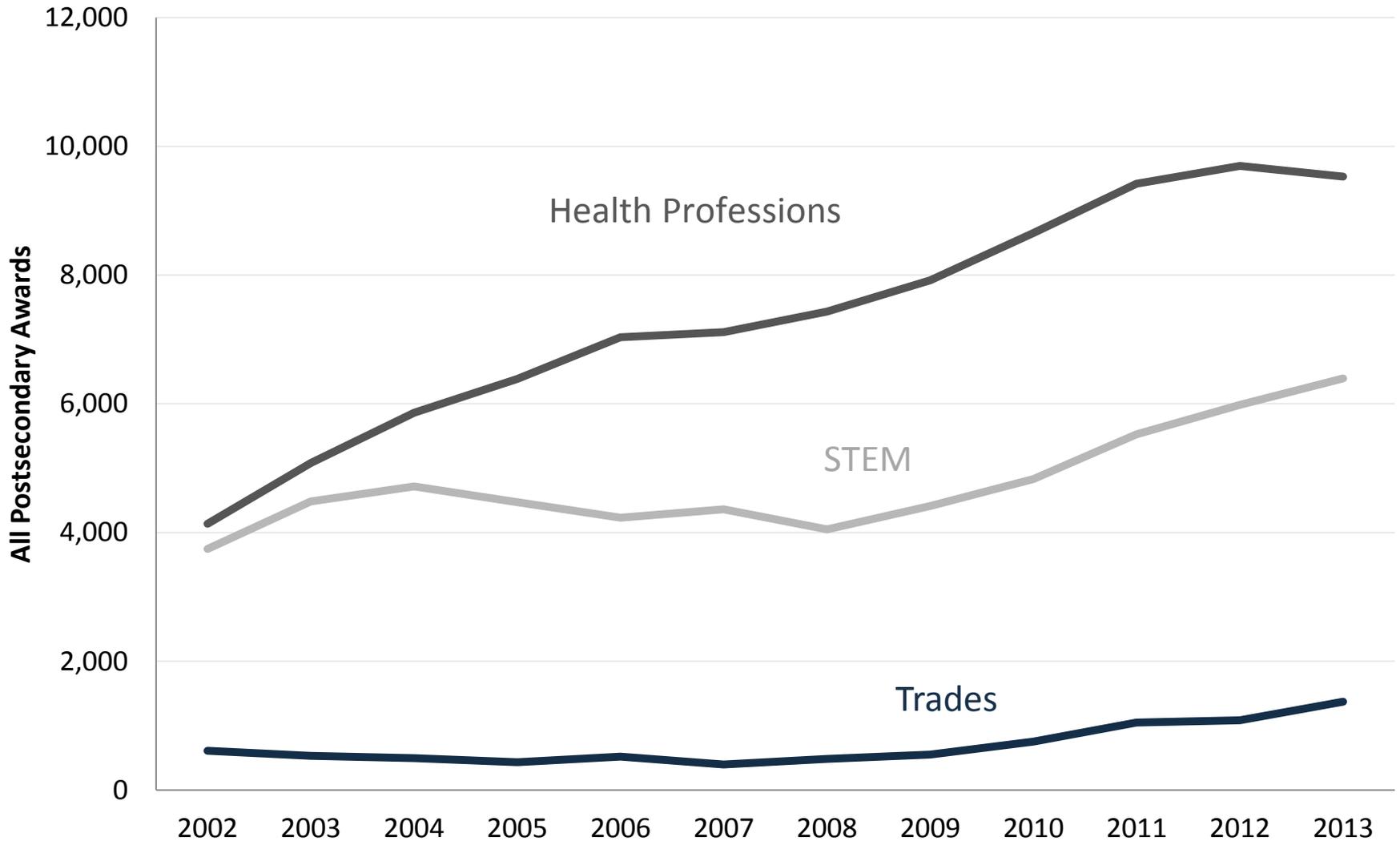
All meetings of the STEM Investment Council are open to the public and will conform to Oregon public meetings laws. The upcoming meeting schedule and materials from past meetings are posted online. A request for an interpreter for the hearing impaired or for accommodations for people with disabilities should be made to Seth Allen at 503-378-8213 or by email at Seth.Allen@state.or.us. Requests for accommodation should be made at least 48 hours in advance.



Education and Careers

Oregon Learns
December 3, 2014

Postsecondary Awards in Health Professions, STEM, and Trades Oregon, 2002-2013



Source: ECONW analysis of IPEDS

Awards in STEM (incl. Engineering)

Postsecondary STEM Awards, Oregon, 2002-2013

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Private Institutions												
Certificates	44	52	39	23	12	9	8	1	8	19	12	6
Associate's	423	549	428	302	244	194	184	192	163	236	234	188
Bachelor's	627	658	732	682	670	760	723	730	691	770	782	851
Master's	1	3	4	4	2	1	1	1	1	0	1	3
Doctor's	0	0	0	0	0	0	0	0	0	0	0	0
Public Institutions												
Certificates	72	88	124	149	104	159	171	281	433	671	725	846
Associate's	348	623	554	512	418	370	314	390	504	653	826	811
Bachelor's	1,632	1,769	1,921	1,930	2,024	2,070	1,928	2,068	2,208	2,274	2,412	2,734
Master's	498	592	751	724	573	593	535	549	605	672	740	711
Doctor's	100	147	164	147	185	205	185	200	216	229	250	246

Source: ECONW analysis of the Integrated Postsecondary Education Data System (IPEDS) data

Note: STEM defined as computer and information sciences/support services, engineering, engineering technologies, biological and biomedical sciences, mathematics/statistics, physical sciences, and science technologies.

Awards in Engineering

Postsecondary Awards in the Engineering and Related Fields, Oregon, 2002-2013

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Private Institutions												
Certificates	0	0	0	1	0	0	0	0	0	0	0	0
Associate's	225	330	219	106	59	52	56	72	65	82	92	69
Bachelor's	98	102	87	79	97	96	119	85	86	122	140	146
Master's	1	3	4	4	2	1	1	1	1	0	1	1
Doctor's	0	0	0	0	0	0	0	0	0	0	0	0
Public Institutions												
Certificates	34	49	61	83	62	81	106	131	242	290	390	473
Associate's	270	445	380	373	284	272	237	245	304	393	510	473
Bachelor's	667	690	749	750	819	829	719	783	833	931	964	979
Master's	236	281	406	388	277	293	259	278	279	329	373	348
Doctor's	23	32	46	38	44	36	36	55	49	52	47	72

Source: ECONW analysis of the Integrated Postsecondary Education Data System (IPEDS) data

Note: Includes all awards in engineering, engineering technologies, and related fields.

Awards in Health Professions

Postsecondary Awards in Health Professions, Oregon, 2002-2013

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Private Institutions												
Certificates	1,185	1,567	2,341	2,572	2,930	2,787	2,797	3,213	3,043	3,408	3,309	2,563
Associate's	33	79	100	161	215	225	209	186	233	437	384	498
Bachelor's	213	229	221	259	366	459	497	531	598	668	633	713
Master's	207	229	188	208	223	245	246	295	340	337	336	349
Doctor's	0	66	42	38	62	49	260	238	467	436	440	455
Public Institutions												
Certificates	939	1,186	1,236	1,246	1,210	1,231	931	906	1,105	1,192	1,213	1,478
Associate's	832	978	1,021	1,093	1,123	1,169	1,234	1,211	1,274	1,292	1,414	1,381
Bachelor's	488	515	472	559	662	698	678	716	908	960	1,143	1,294
Master's	208	214	215	234	230	236	288	283	339	357	465	431
Doctor's	30	16	25	18	15	13	292	338	345	334	361	367

Source: ECONW analysis of the Integrated Postsecondary Education Data System (IPEDS) data

Note: Includes all awards in the health professions and related programs category

Trades

Postsecondary Awards in the Trades, Oregon, 2002-2013

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Private Institutions												
Certificates	12	44	0	0	0	0	0	0	0	0	0	0
Associate's	42	0	0	0	0	0	0	0	0	0	0	0
Bachelor's	8	0	0	0	4	8	0	0	0	0	0	0
Master's	0	0	0	0	0	0	0	0	0	0	0	0
Doctor's	0	0	0	0	0	0	0	0	0	0	0	0
Public Institutions												
Certificates	187	221	253	228	247	169	252	299	452	671	656	898
Associate's	361	263	240	202	265	219	232	252	297	375	427	474
Bachelor's	0	0	0	0	0	0	0	0	0	0	0	0
Master's	0	0	0	0	0	0	0	0	0	0	0	0
Doctor's	0	0	0	0	0	0	0	0	0	0	0	0

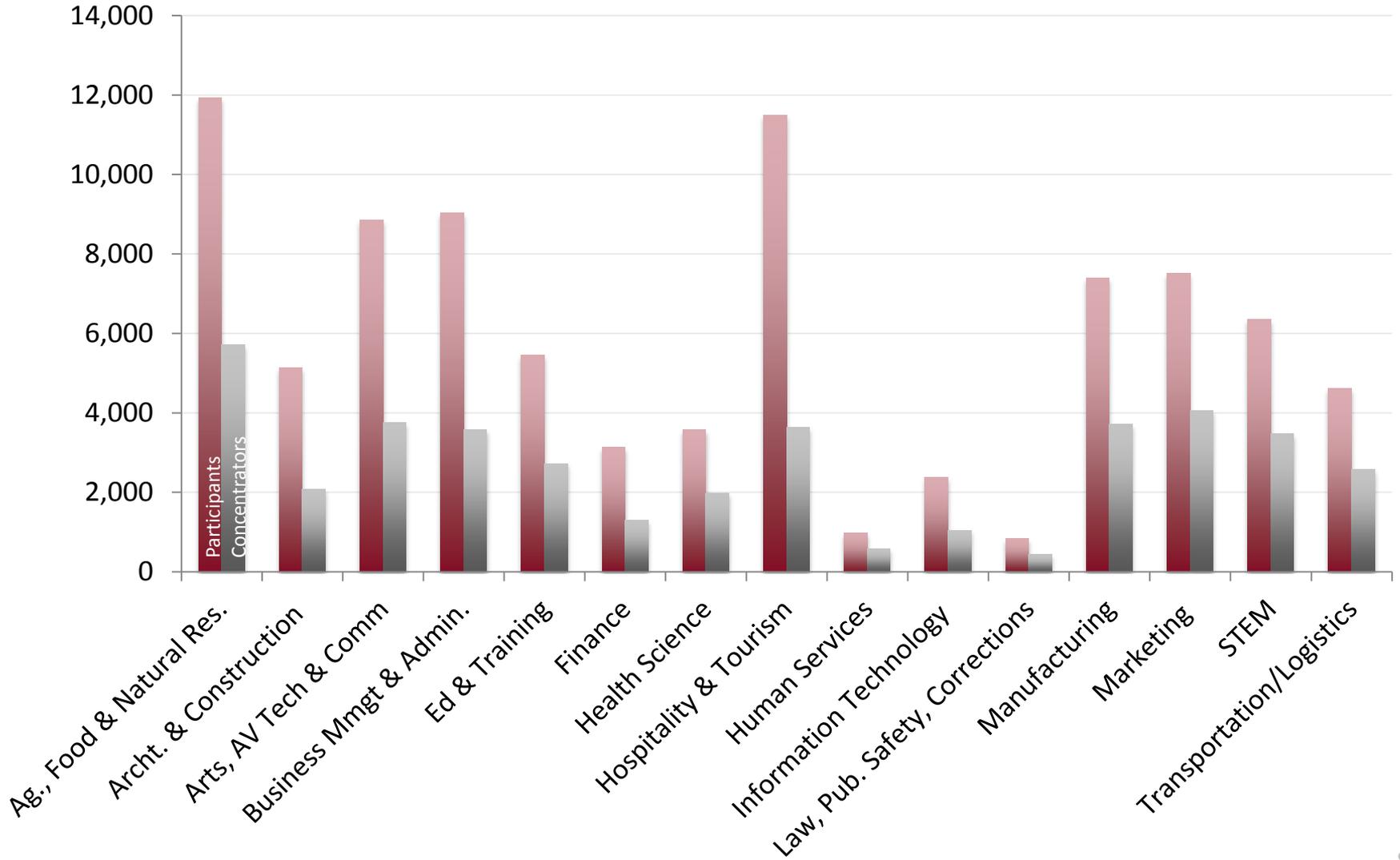
Source: ECONW analysis of the Integrated Postsecondary Education Data System (IPEDS) data

Note: Includes all awards in construction trades, mechanic/repair technologies, and precision production.

CTE by HS Graduating Class

HS Class	Number of CTE Credits Taken									Total
	<=0.5	<=1	<=2	<=3	<=4	<=5	<=6	<=7	>7	
2009-10	3,984	4,375	5,768	3,660	2,282	1,326	826	460	670	23,351
2010-11	3,980	4,345	5,644	3,843	2,430	1,455	877	424	538	23,536
2011-12	4,105	4,528	5,759	3,583	2,337	1,377	761	471	558	23,479
2012-13	4,355	4,508	5,876	3,746	2,203	1,248	772	408	544	23,660
Change 2013 minus 2010	371	133	108	86	-79	-78	-54	-52	-126	309

CTE Participants/Concentrators by Area, 2012-2013



Growth projected in all STEM areas

	2012 Employment	2022 Employment	Employment Change	Percent Change
Health Practitioners and Technicians	85,268	101,428	16,160	19.0%
Computer Occupations	40,529	49,041	8,512	21.0%
Engineers and Engineering Technicians	28,457	32,051	3,594	12.6%
Management Occupations	7,637	8,966	1,329	17.4%
Life Scientists and Technicians	9,092	10,367	1,275	14.0%
Physical Scientists and Technicians	8,111	9,211	1,100	13.6%
Architects, Surveyors, Cartographers and Techs	6,134	6,951	817	13.3%
Mathematical Science Occupations	1,062	1,322	260	24.5%
	186,290	219,337	33,047	17.7%

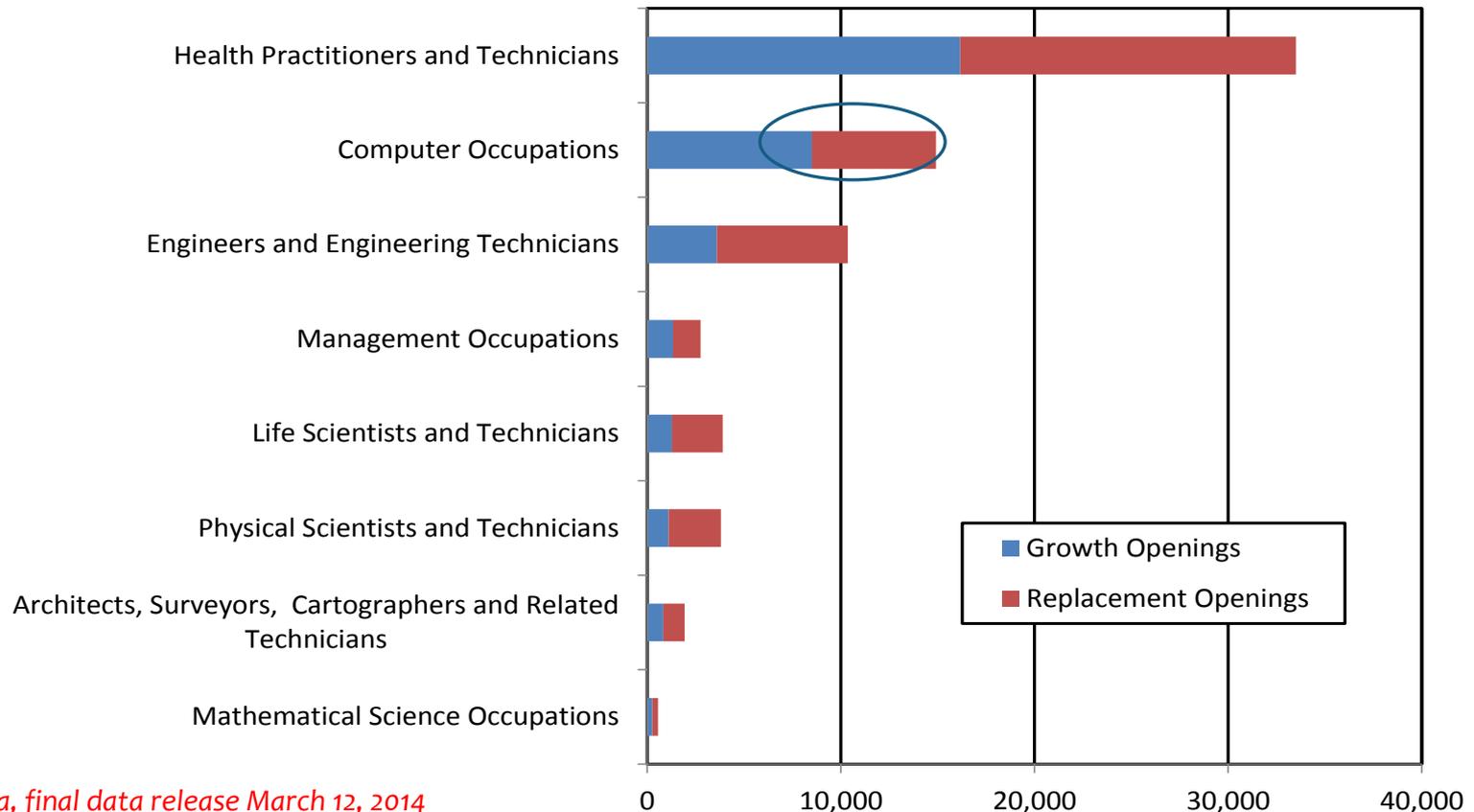
Top demand occupations dominated by health care and computer occupations

	2012 Employment	2022 Employment	Percent Change	Total Openings
Registered Nurses	30,677	35,636	16.2%	10,907
Physicians and Surgeons	8,185	9,862	20.5%	3,726
Computer User Support Specialists	7,779	9,647	24.0%	3,090
Software Developers, Applications	7,563	9,610	27.1%	3,017
Computer Systems Analysts	4,794	6,110	27.5%	2,069
Computer Occupations, All Other	5,003	5,911	18.2%	1,694
Network and Computer Systems Administrators	4,670	5,474	17.2%	1,538
Civil Engineers	3,382	4,049	19.7%	1,489
Dental Hygienists	3,356	3,975	18.4%	1,478
Pharmacists	3,506	4,144	18.2%	1,475
Medical Records and Health Information Technicians	3,014	3,630	20.4%	1,413
Industrial Engineers	3,447	3,832	11.2%	1,393
Computer and Information Systems Managers	3,883	4,682	20.6%	1,338
Pharmacy Technicians	4,699	5,550	18.1%	1,316
Computer Hardware Engineers	3,445	3,993	15.9%	1,291
Mechanical Engineers	2,610	3,006	15.2%	1,287
Physical Therapists	2,362	3,025	28.1%	1,244
Licensed Practical and Licensed Vocational Nurses	2,705	3,242	19.9%	1,197
Biological Technicians	2,626	3,002	14.3%	1,163
Computer Programmers	2,999	3,344	11.5%	1,128

Preliminary data, final data release March 12, 2014

Need to replace workers outweighs growth openings in most areas

Growth and Replacement Job Openings in STEM Occupations, 2012-2022



STEM jobs found in rural and urban areas – driven by health care

