**Testimony for the
Finance Revenue and Bonding Committee
Jennifer Widness, President
Connecticut Conference of Independent Colleges
April 29, 2019**

On behalf of the Connecticut Conference of Independent Colleges (CCIC) I am submitting testimony on **SB 1129: An Act Concerning Various Initiatives to Promote Computer Science and Technical Talent in Education,** which seeks to implement various initiatives to develop and promote a technologically trained workforce to meet the needs of the state's employers.

CCIC strongly supports the objective of this bill. The state must take a more proactive approach about ensuring its talent pipeline aligns with the needs of our evolving economy. We do, however, have a few concerns about some provisions proposed in the bill to accomplish this goal, as outlined below.

By way of background, Connecticut's 15 private, non-profit colleges that comprise the membership of CCIC enroll over 80,000 students in Connecticut annually. They award nearly 50% of the bachelor's degree earned in the state each year and over 60% of the graduate degrees earned. Of the bachelor's degrees and above awarded in key areas that are targets for economic growth – engineering, computer science, bioscience and the health professions – most are earned at the state's independent colleges (see figure 1).

Connecticut's workforce is one of the most educated in the nation. However, according to Georgetown University's Center on Education and the Workforce, it is not educated *enough* to meet the skilled workforce needs in the foreseeable future (see, CT's Strategic Master Plan for Higher Education). Further, research done by McKinsey for the Commission on Fiscal Stability and Economic Growth in 2018, finds there is a significant mismatch between supply and demand in Engineering, Computer and Mathematics and the Healthcare practitioners (see figure 2).

Connecticut has seen a healthy increase in the number of STEM degrees awarded over the past seven years (figures 3). However, recent data analyzed by P20 WIN shows **Connecticut continues to lag our neighboring states on a per capita basis in the production of degrees in engineering, computer science and other STEM fields** (see figures 4-5 and click here for the complete P20 WIN report).

Further, job growth projections analyzed by P20 WIN shows that Connecticut is projected to produce enough technology talent for only 35% of the projected computer science jobs in 2022 (see figure 6). Connecticut must adopt an aggressive and robust approach, as outlined in SB 1129, to expand our tech talent pipeline to ensure we have the necessary talent to meet the workforce needs.

In particular, CCIC supports Section 12 of the bill which requires the appointment of a Chief Talent Officer that reports to the Governor who is tasked with ensuring the state is producing the workforce required to meet the demands of our employers. The Chief Talent Office is required to:
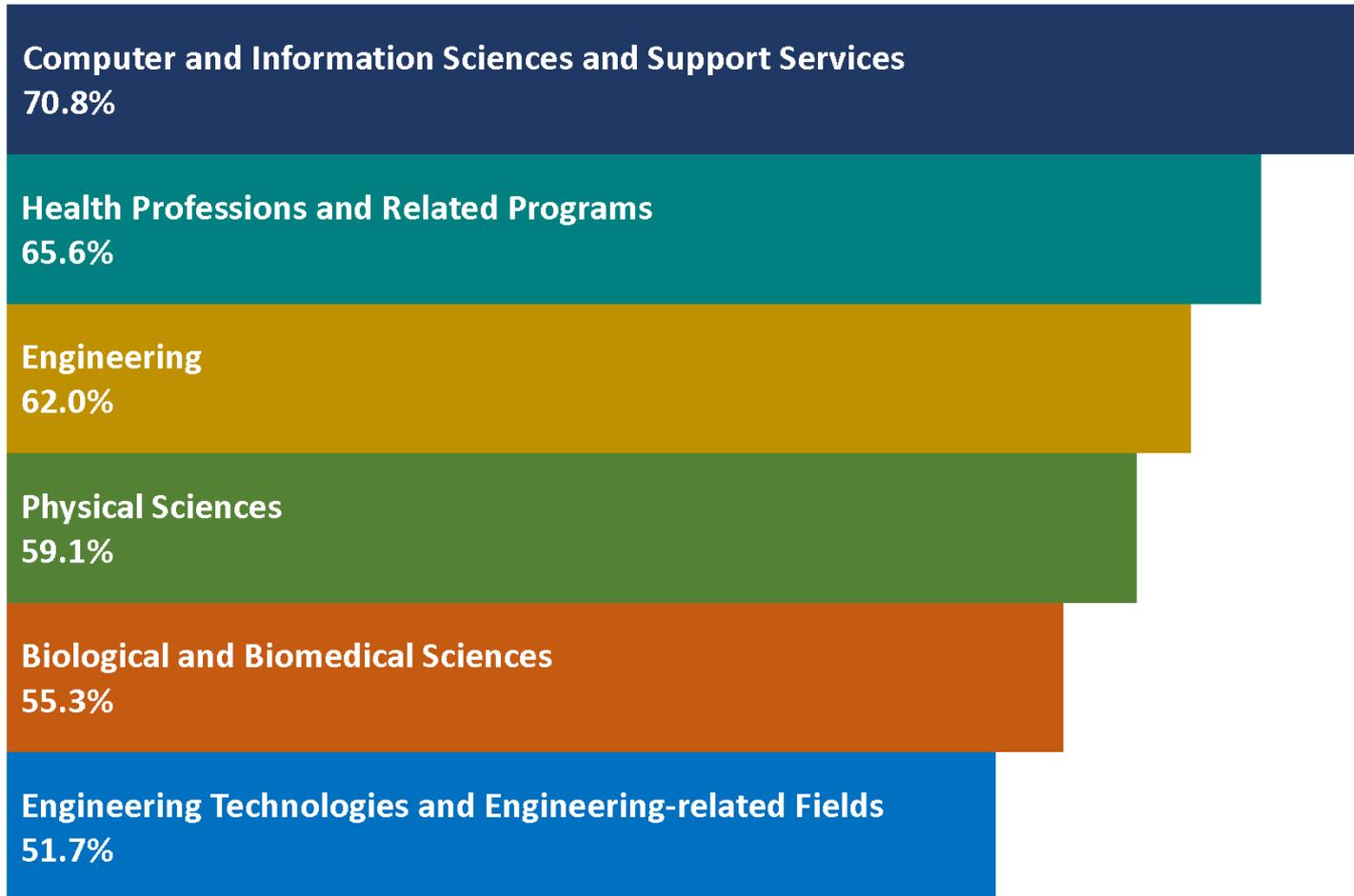
- Use data to inform decision-making about where the gaps in our talent pipeline exist, at what level and by region;
- Align state resources and coordinate our state agencies to meet the existing and future talent needs of the state, as identified in the data assessment conducted in subsection (1) of Section 12 of the bill;
- Support the Office of Higher Education to implement the State's Strategic Plan for Higher Education;
- Support regional economic development efforts by sharing the data analysis with municipal leaders and other stakeholders and award grants to fund programs that close gaps in the talent pipeline at a local level; and
- Create a business and higher education advisory board to support the implementation of the provisions of the bill.

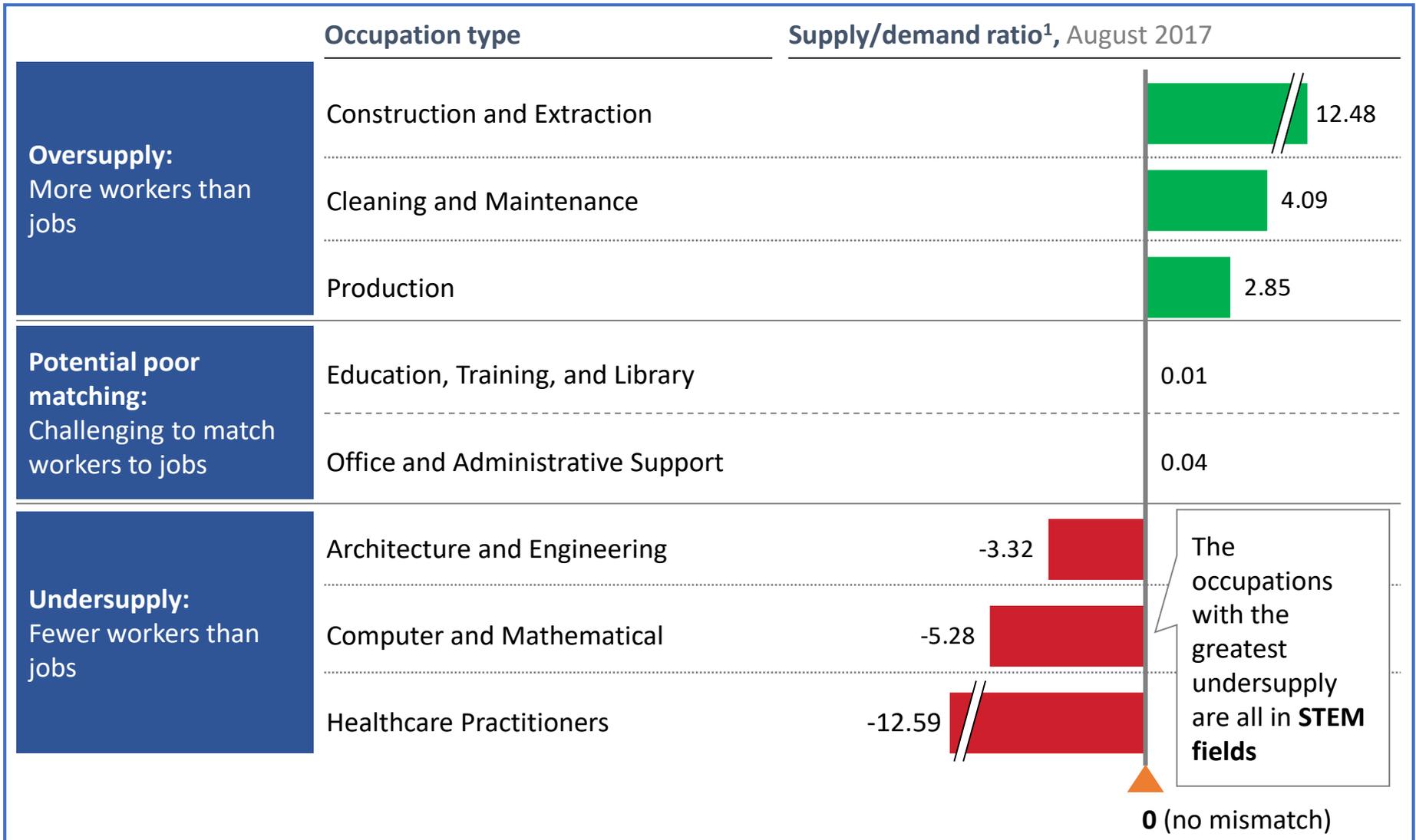**CCIC has concerns about the following provisions of the bill:**

- Section 2 requires teacher preparation programs to revise their curriculum to include instruction on computer science training for ALL teacher candidates by July 1, 2019. This is only weeks away and is simply not manageable for some teacher preparation programs. **We would ask that this date be pushed out to July 1, 2020.**
- Section 7 requires any company or business that receives funds or economic assistance from DECD to offer internships to students attending an institution of higher education in the state or externships during the summer months to teachers in public schools in the state, or both. CCIC is concerned about this mandate as some companies may not have the infrastructure to support internships that are appropriate and beneficial for students.
- Section 8 proposes an electronic database of internships available to students at public institutions of higher education. This section should be revised so that students at *all* institutions of higher education in the state should have access to this database of internship opportunities.

Figure 1

Percent of Statewide Industry Cluster Degrees Awarded by Connecticut Independent Colleges in 2017-18: Bachelor's Degrees and Above

Source: IPEDS Data Center

Computer and Information Sciences and Support Services
70.8%

Health Professions and Related Programs
65.6%

Engineering
62.0%

Physical Sciences
59.1%

Biological and Biomedical Sciences
55.3%

Engineering Technologies and Engineering-related Fields
51.7%

Figure 2

Connecticut Suffers from an Undersupply of STEM Degrees in the Labor Market

	Occupation type	Supply/demand ratio[1], August 2017
Oversupply: More workers than jobs	Construction and Extraction	12.48
	Cleaning and Maintenance	4.09
	Production	2.85
Potential poor matching: Challenging to match workers to jobs	Education, Training, and Library	0.01
	Office and Administrative Support	0.04
Undersupply: Fewer workers than jobs	Architecture and Engineering	-3.32
	Computer and Mathematical	-5.28
	Healthcare Practitioners	-12.59

The occupations with the greatest undersupply are all in **STEM fields**
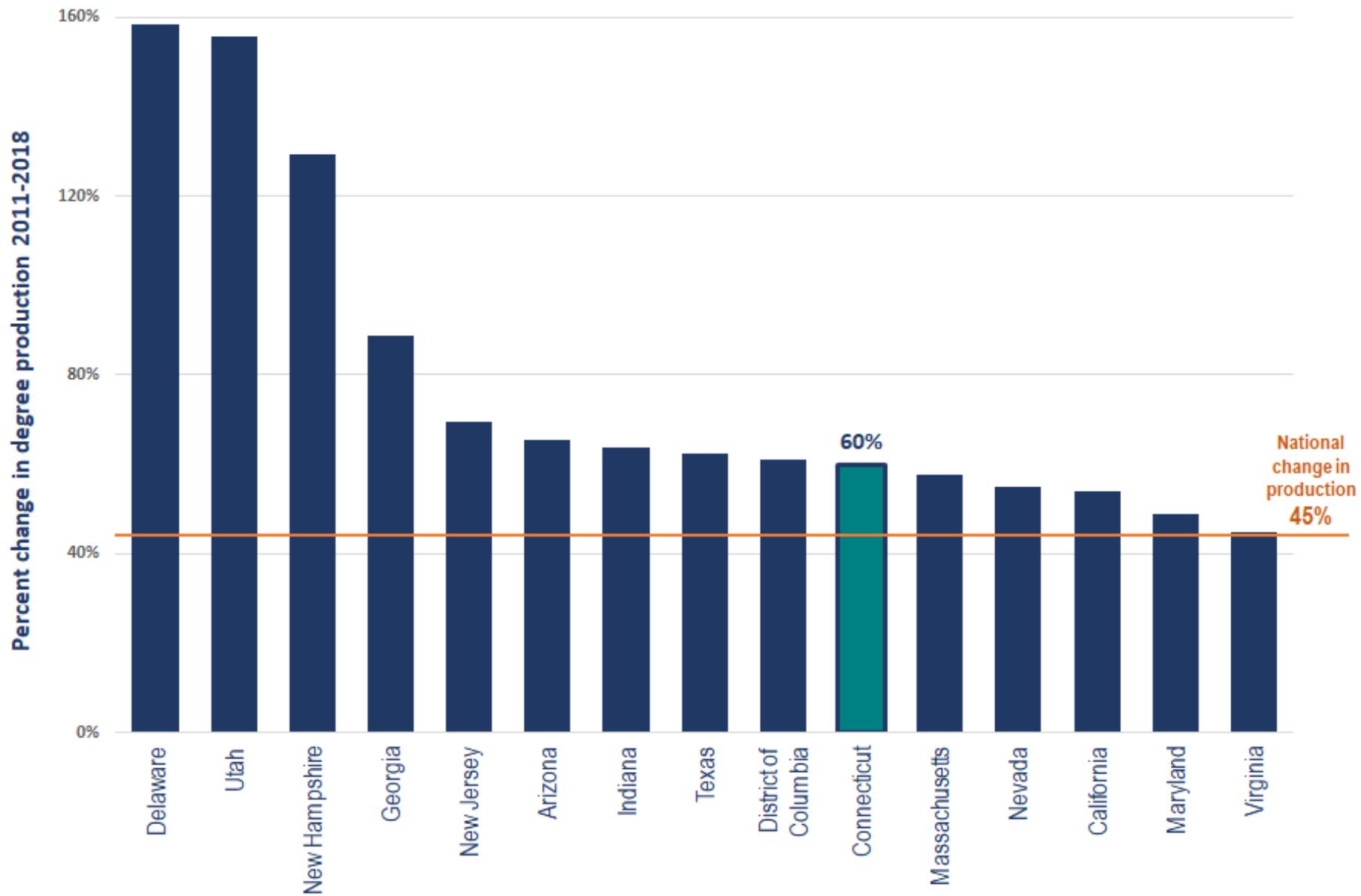
0 (no mismatch)

1 Measured as the ratio of unemployed individuals in a given profession to open job postings in that profession

SOURCE: CT Commission on Fiscal Stability & Economic Growth via EMSI and BLS data
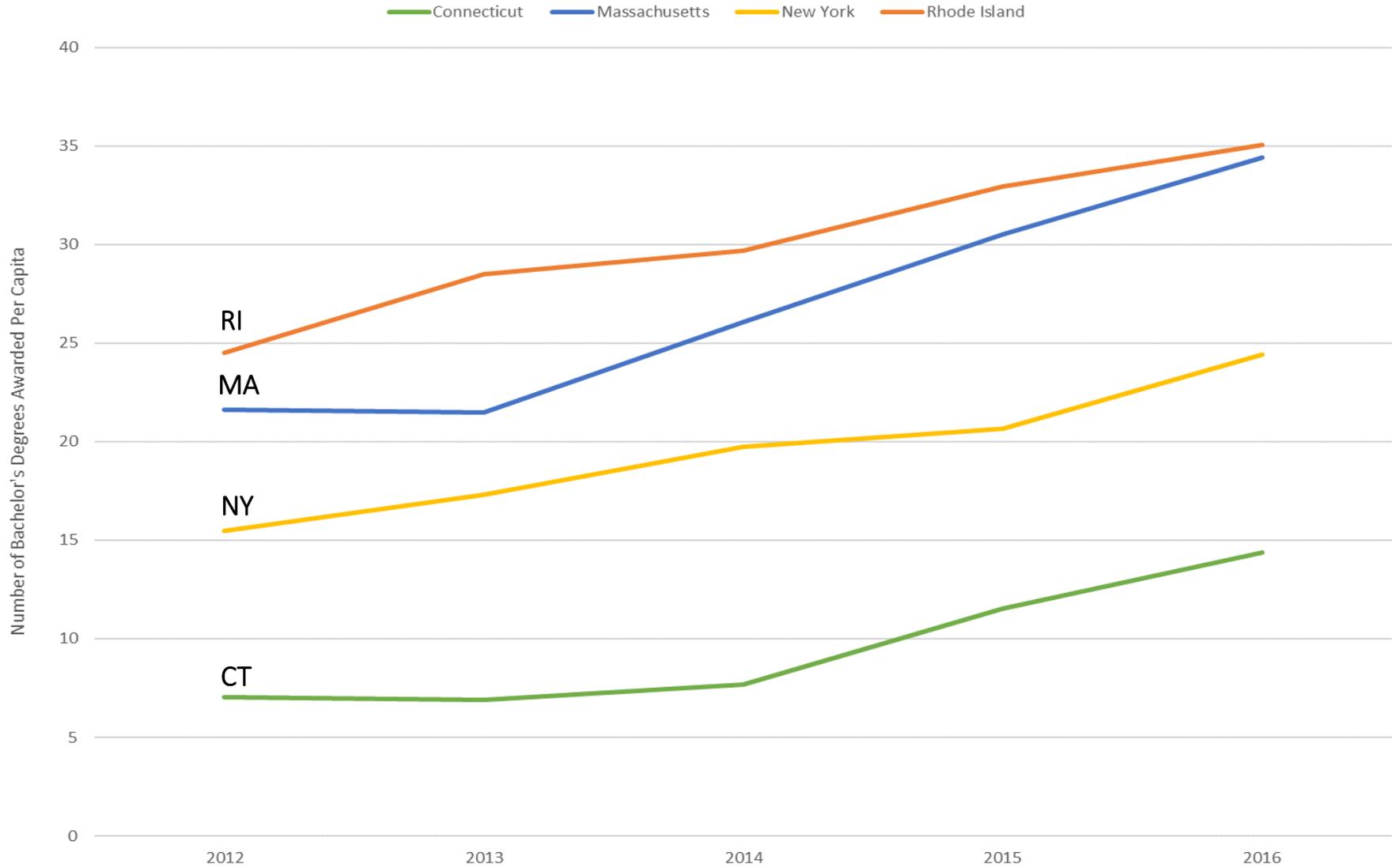
Figure 3

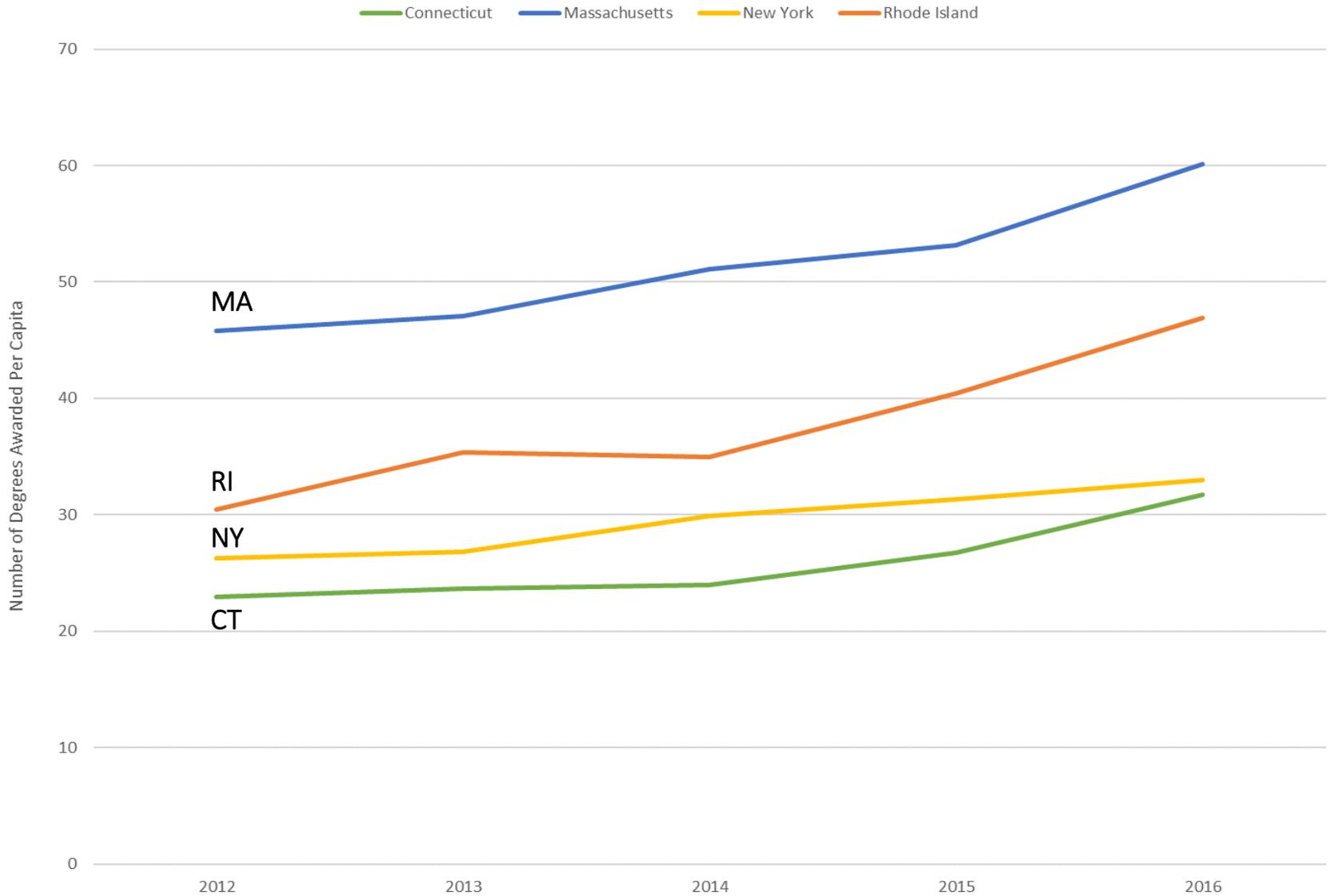Fastest Growing States for STEM Majors, 2011-2018
Source: IPEDS

Figure 4

Trends of Computer Science Bachelor's Degrees Awarded Per Capita by State

Source: Comprehensive Study on Technology Talent in CT (P20 WIN)

Figure 5

Trends of Engineering Bachelor's Degrees Awarded Per Capita by State

Source: Comprehensive Study on Technology Talent in CT (P20 WIN)

Figure 6

Reconciling projected CT technology talent with projected CT technology jobs

Source: Comprehensive Study on Technology Talent in CT (P20 WIN)

	Replacement of Current Jobs in 2022	New Jobs by 2022	Percent of Jobs Requiring Associate's or Bachelor's Degree	Jobs Available for CT's College Graduates	Number of CT Graduates by 2018-2022	Percent of Jobs Filled by CT Graduates
Computer Science	21,133	6,552	59%	16,334	5,793	35%
Engineering	23,574	4,345	49%	13,681	9,878	72%
Biological sciences	7,261	2,525	44%	4,306	9,054	210%
Math and statistics	3,046	1,200	39%	1,656	2,349	142%
Physical sciences	5,619	1,345	44%	3,064	1,987	65%
Health programs	80,931	43,336	26%	32,309	24,864	77%