



# 2019 UpSkill Works

Opportunity for All: Accelerating UpSkill Houston's  
impact and scale

JUNE 25, 2019

## What we will share today



Setting the context: Houston NEXT and Opportunity for All

UpSkill's role and successes

Houston's labor market for middle-skill jobs

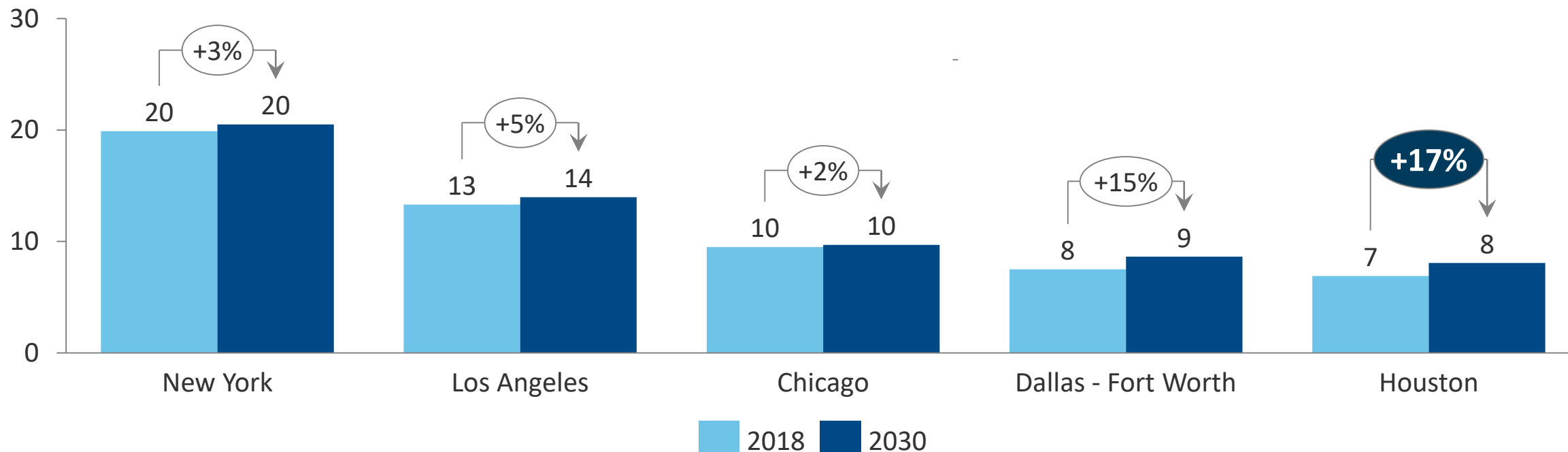
Key trends shaping the middle-skill workforce of the future

Looking ahead: Accelerating impact for UpSkill

## Houston positioned for fastest population growth among top 5 US cities

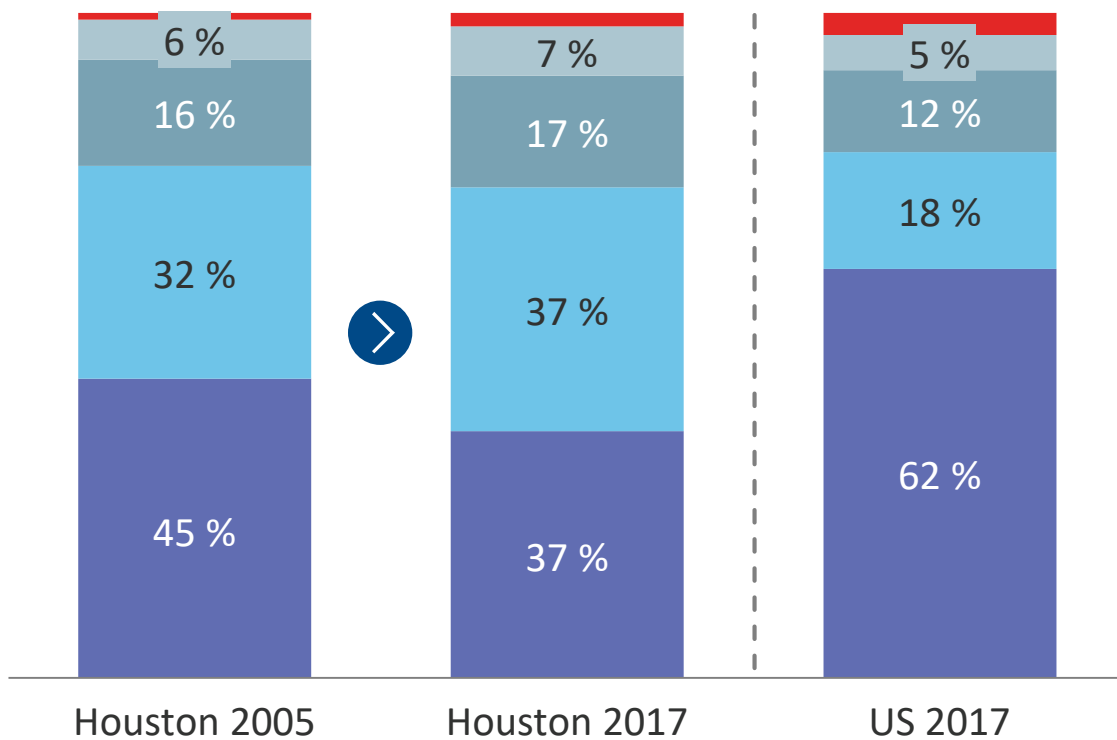
Population (M)

5 Largest MSAs in the US





## As Houston's population expands, demographics are rapidly shifting

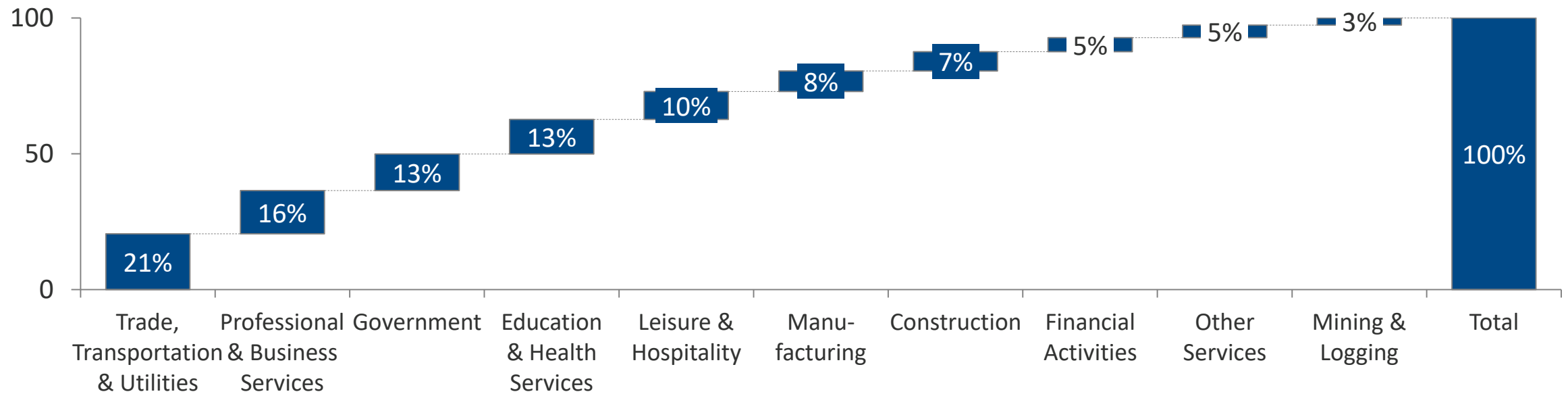


- Other
- Asian
- African American
- Hispanic/Latino
- White

**70%**  
of Houstonians  
aged <20 are  
people of color

## Also benefit from industry diversity – no single sector dominates employment

Houston Metro region employment by Industry (2018)

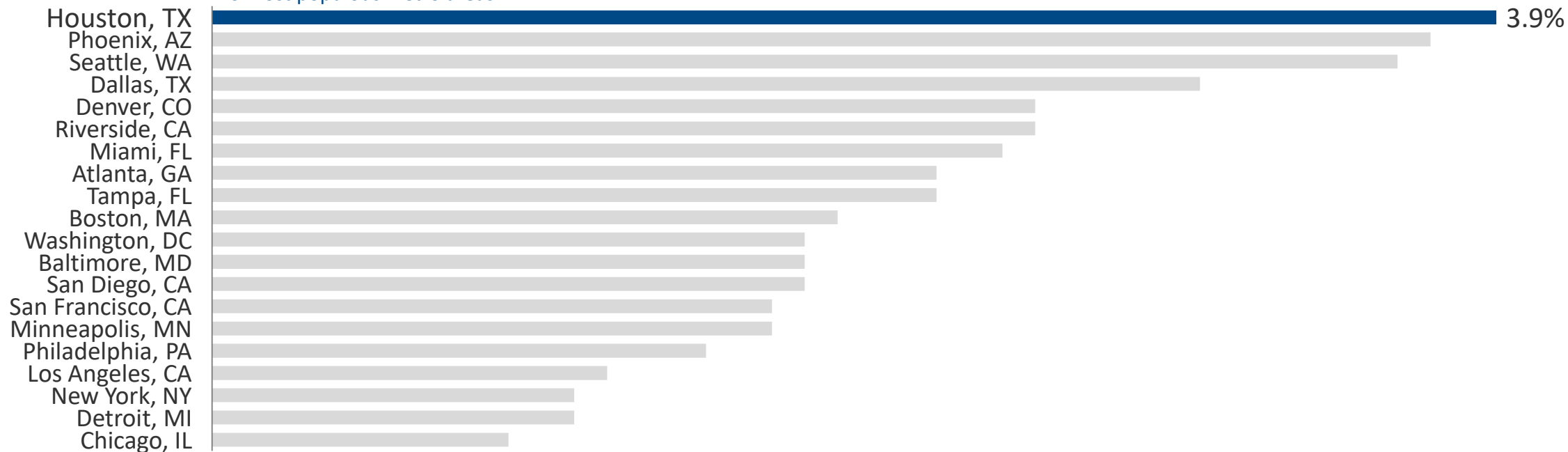


1. Includes Management, Engineering, IT, & Law 2. Includes Medicine & Pharmaceuticals 3. Includes Oil & Gas Extraction 4. Includes Refining & Petrochemical Ops  
 Source: Current Employment Statistics from Texas Labor Market Information (2018)

## With population growth & industry diversity, Houston continues to lead the nation in job growth

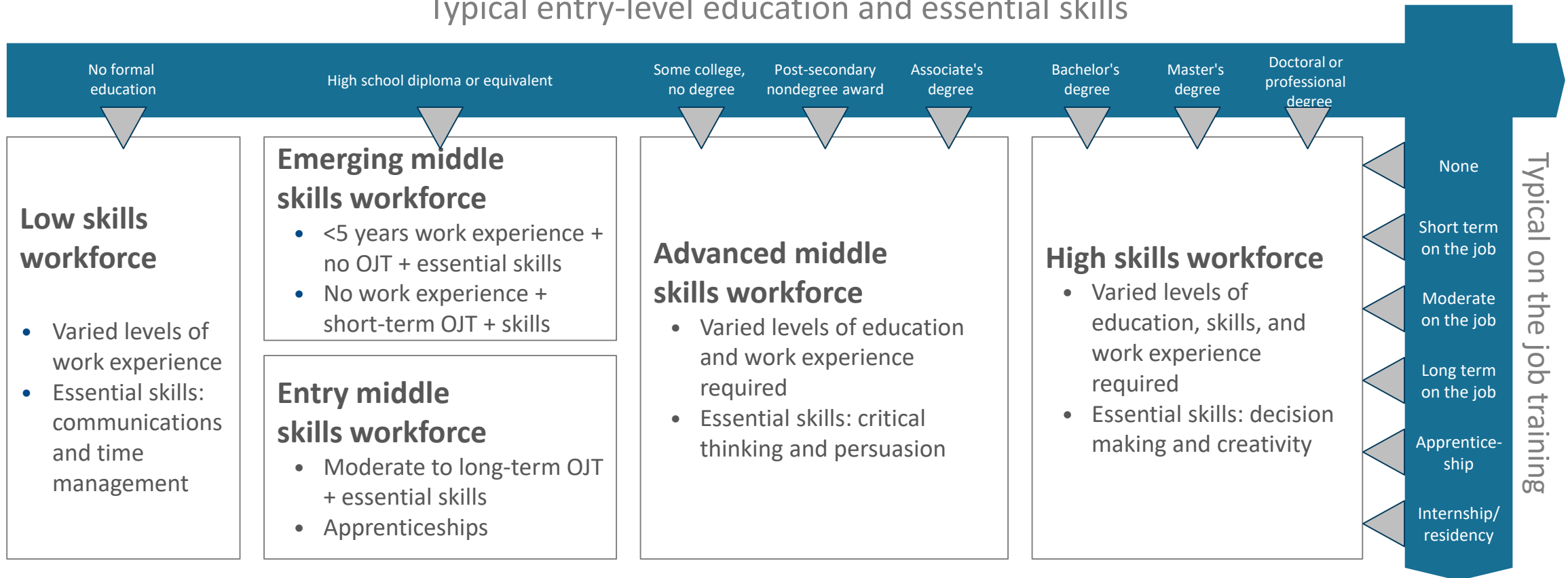
Employment growth, percent change, Oct'17 to Oct'18

20 most populous metro areas



# To support this growth, Houston has a balanced labor economy – that provides multiple entry points into the workforce

## Typical entry-level education and essential skills

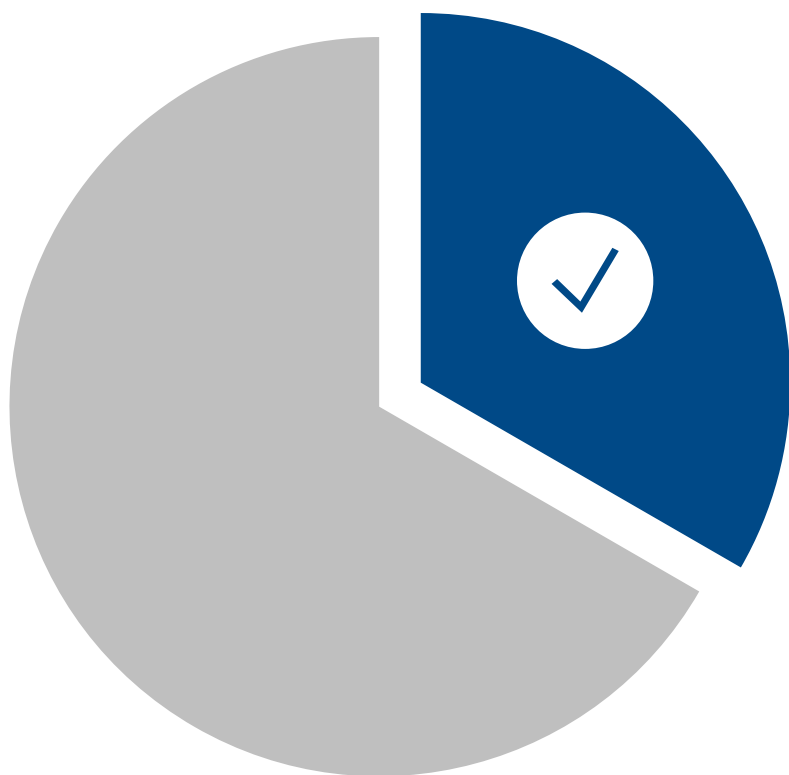




'Houston NEXT'  
aims to position  
Houston as a **top  
global city** and  
ensure residents  
can **share in  
region's economic  
prosperity**

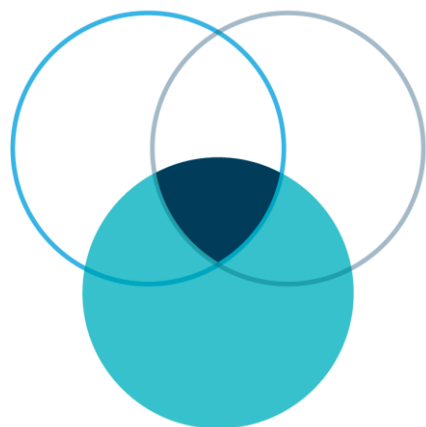






UpSkill is a part of  
Houston NEXT's  
"Opportunity for All",  
playing a key role in  
middle skills for Houston

UpSkill helps develop both the 'flow' and 'stock' of middle-skill workers



- **PUBLIC EDUCATION (PRE-K – 12)**
- **HIGHER EDUCATION**
- **WORKFORCE DEVELOPMENT**

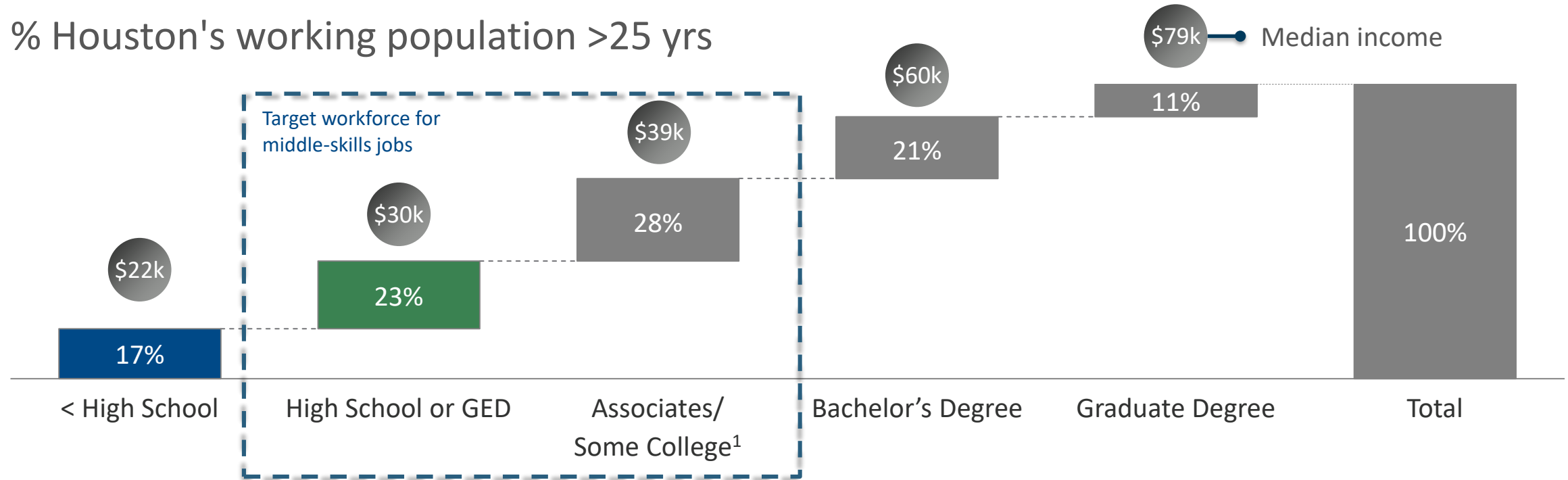


Incoming workforce i.e. 'Flow'

Existing workforce i.e. 'Stock'

## Increasing eligibility for middle-skill jobs enables a 30% – 55% increase in median income

% Houston's working population >25 yrs



1. Associates degrees constitute 1/4<sup>th</sup> of the 28%, i.e. 7% of total  
 Source: U.S. Census Bureau (2005), 2013 - 2017 American Community Survey 5-year estimates



## Middle skills jobs provide "Opportunity for All" through desirable career entry and transition pathways



Petrochemical

\$74K

for Industrial Production Manager



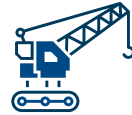
\$38K

for Engineering Technicians



\$29K

for Production Workers



Construction

\$85K

for Construction Managers



\$44K

for Heating, A/C Mechanics & Installers



\$30K

for Maintenance and Installation Helpers



Healthcare

\$70K

for Registered Nurse<sup>1</sup>



\$43K

for licensed vocational nurse



\$30K

for Medical Assistant

1. Salary shown is for a Registered Nurse position not requiring a Bachelor's degree  
Source: BurningGlass job and median wages data for middle-skills occupations in Houston, 2019

## Advanced middle skills requiring 2-year technical degrees provide additional income opportunities



Petrochemical<sup>1</sup>

\$129K

for Plant Supervisor



\$76K

for Front Line Supervisor



\$65K

for Process Technician



Healthcare<sup>2</sup>

\$79K

for Radiation Therapist



\$60K

for MRI Technologist



\$49K

for Radiation Technician

Yet, ~40% of the existing workforce ('stock') does not possess the education/ skills necessary to fill middle-skill jobs



17%

of adults in Houston lack a high school diploma (compared to 12% nationwide)



Lack of education

23%

of adults in Houston have a high school diploma but no post-secondary credentials

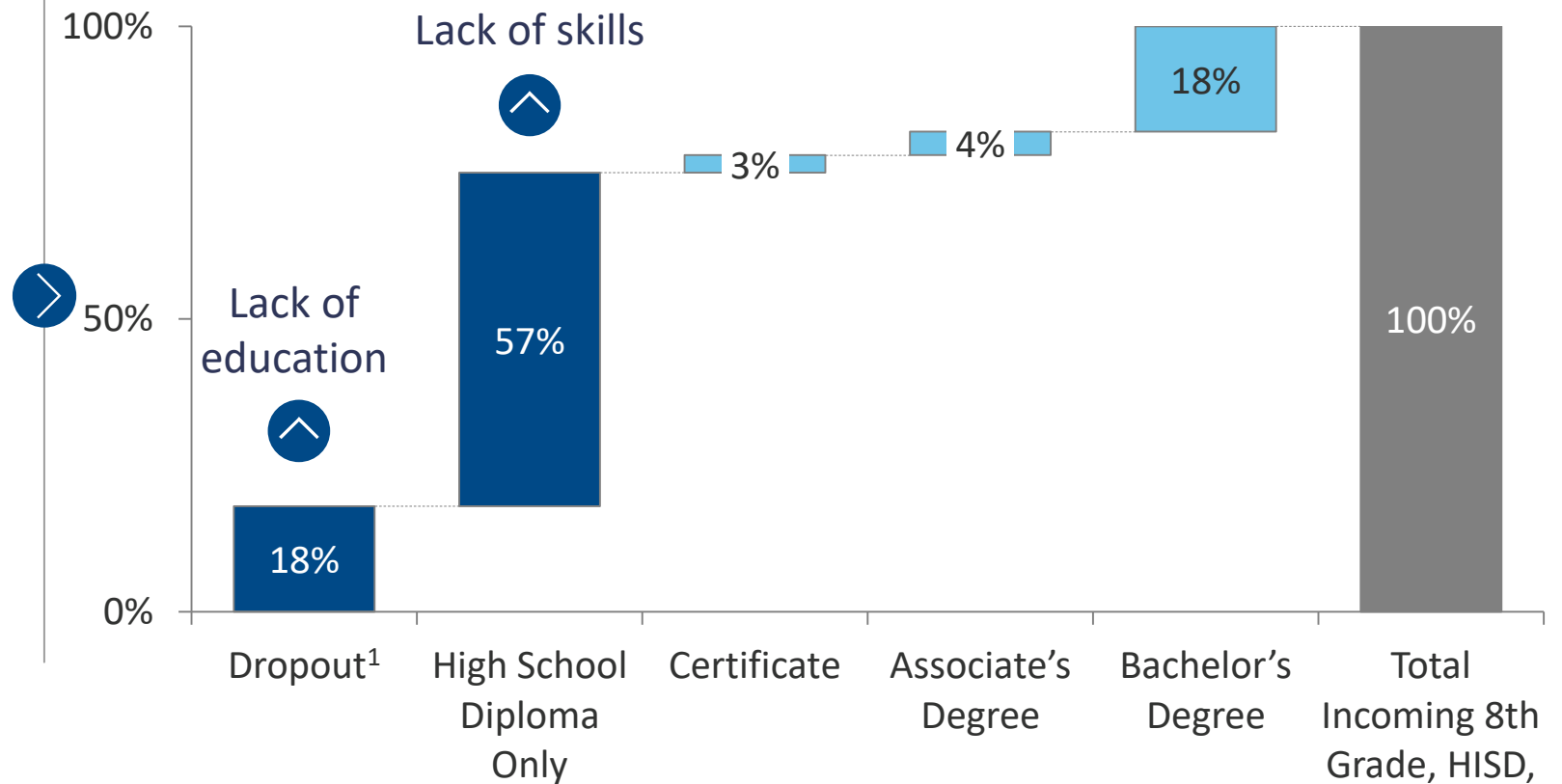


Lack of skills



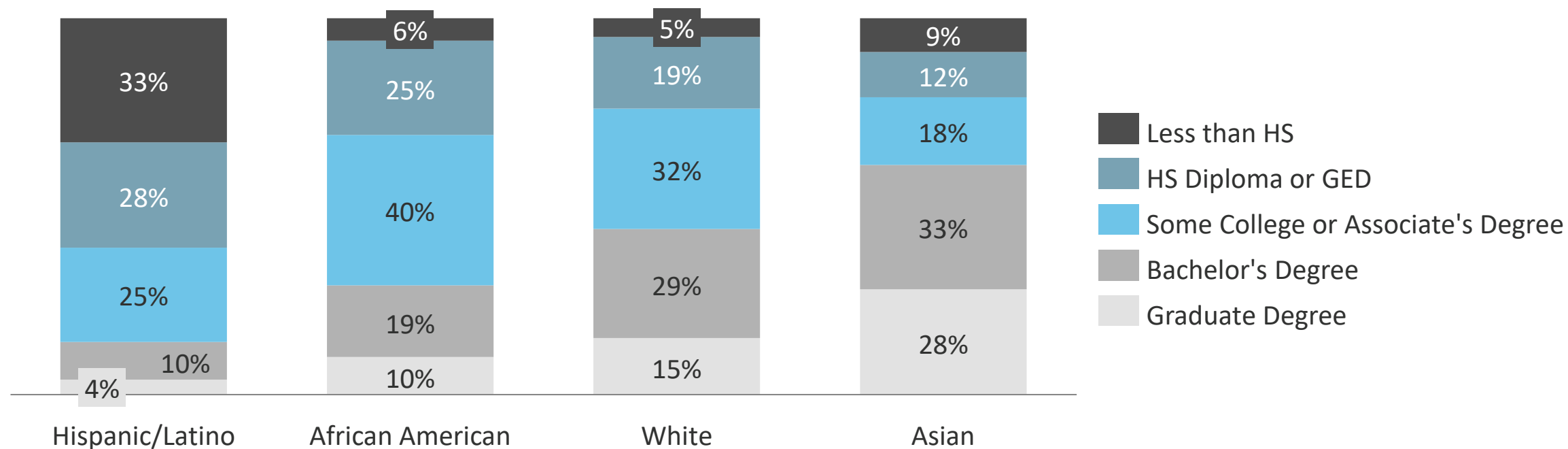
And, even more concerning, ~75% of the incoming workforce ('flow') may not possess the education/skills necessary to fill middle-skill jobs

HISD Outcomes in 2017, from incoming Eighth Graders in 2006



1. Includes dropout and continuing students, for which outcomes were not tracked  
Source: Transitioning to College and Work, Brian Holzman, Rice Houston Education Research Consortium (2016); study includes 26,738 HISD students

## Education disparity more pronounced among people of color; with Hispanic population least likely to finish high school



# Founding objectives of UpSkill



**Attract** Houston residents to **middle-skill** positions by raising awareness and changing perceptions



**Train** individuals in skills necessary for success based on industry demand and transferability



**Place** workers in **middle skill** jobs, reward those who continue to upgrade skills, and mentor those who need support



## UpSkill brings Houston stakeholders together to achieve these objectives



### Educators



### Employers

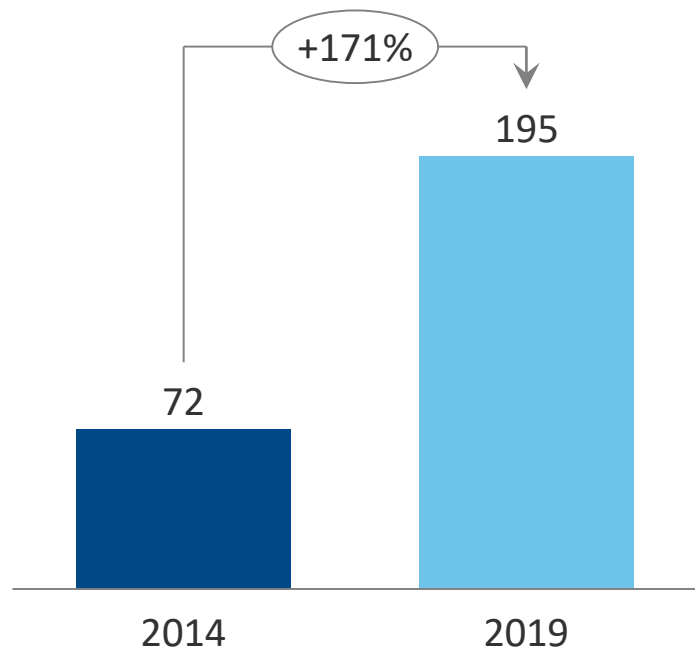


### Community Orgs

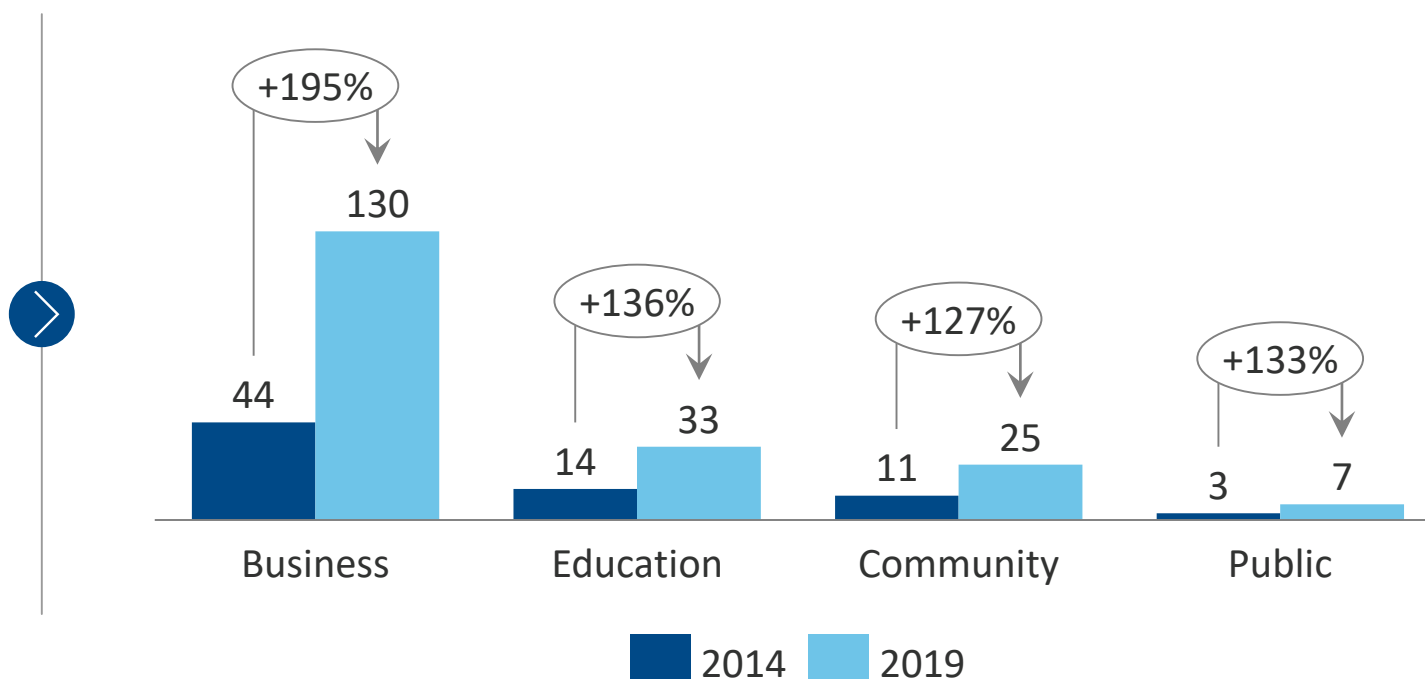


## Number of entities participating in UpSkill has almost tripled since 2014

### Total UpSkill participation



### Breakdown by entity type



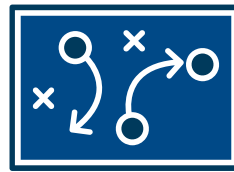
Since its founding, UpSkill has laid a strong foundation by bringing key leaders in the Houston area together



Bringing key business, education and community leaders together



Facilitating and maintaining momentum of industry collaboratives



Inspiring collective action and impact by aligning efforts



Increasing awareness and appreciation of middle-skill careers



Garnering national media recognition in addressing skills gap





Attract

Women in  
Industry  
Conference:  
Increasing  
awareness of  
middle-skill  
careers







Attract

My Life As video series:  
Increasing appreciation  
of middle-skill careers



### MY LIFE AS AN INSTRUMENT TECHNICIAN



Before INEOS, Krystal Garcia was looking for a career that offered more challenge, success, and financial freedom. "Probably one of the biggest satisfactions of working in this industry is that you're part of something that's going out there into the world and making it better," she said.

[LEARN MORE ABOUT BEING AN INSTRUMENT TECHNICIAN](#)

[DOWNLOAD PETROCHEMICAL RESOURCES](#)

[LEARN MORE ABOUT THE MANY PETROCHEMICAL CAREERS AVAILABLE IN HOUSTON](#)



Petrochemworks

January 31 · 🌐

The #Petrochem industry makes a difference and that is something Krystal loves about working in it!

Check out jobs you can love: [PetrochemWorks.com](https://PetrochemWorks.com)





Attract

PetrochemWorks:  
partnership to  
engage  
community  
members through  
digital platforms



**PetrochemWorks.com**  
CAREERS FOR A LIFETIME



Train

## Hire Houston Youth:

Community platform  
to connect Houston  
youth to resources and  
paid summer jobs



# HIRE HOUSTON YOUTH

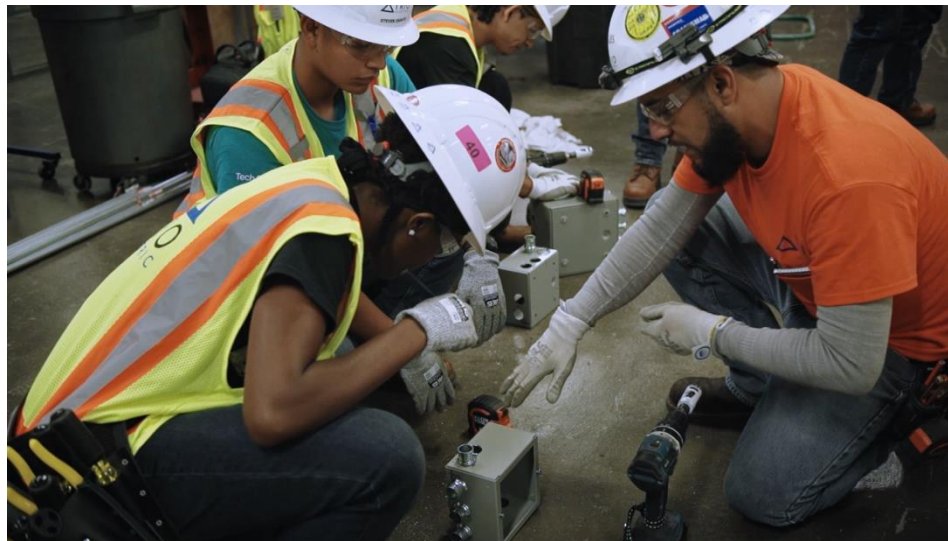




Train and Place

## Trio Electric Company apprenticeships:

Partnership with Spring  
Branch ISD and Houston  
Community College to  
help further career  
opportunities for  
students







Place

## S&B Engineers and Constructors' Hire and Learn Program:

Workforce development program geared to enable "earning while learning" for craft professionals







Engage

Secretary of  
Commerce Pritzker  
at LyondellBasell  
training facility  
opening:  
Recognizing community  
efforts







Engage

## Industry and Education

### Engagement:

Bringing business,  
education, and  
community leaders  
together







Engage

## UpSkill Works Conference 2018:

Bringing business,  
education, and  
community leaders  
together





We believe UpSkill can build on positive momentum and further accelerate impact in the region by...



... helping place students/  
workers in jobs that offer  
highest possibility for  
career progression



... helping employers find  
the right skills and reduce  
lead time to fill positions  
and retain employees



... more fundamentally  
changing perceptions  
about middle-skill jobs



An aerial photograph of a complex multi-level highway interchange in Houston, Texas. The interchange features several curved ramps and overpasses with multiple lanes of traffic. The surrounding area includes green spaces, trees, and a city skyline with various buildings in the background. The lighting suggests a late afternoon or early morning setting, with a warm, golden glow.

# Labor market for middle-skill jobs in Houston

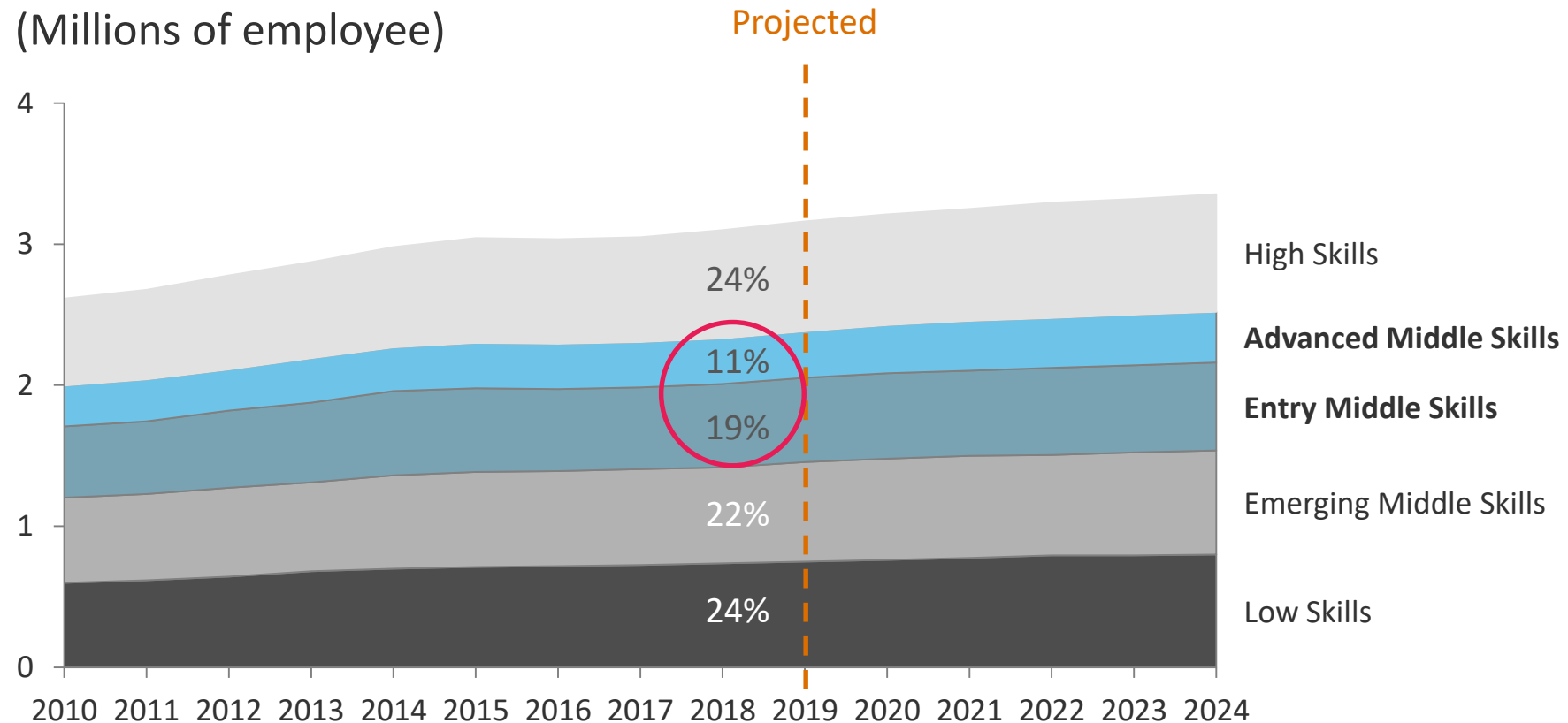
# Greater Houston middle-skill jobs witnessed double digit growth from 2010 to 2018

## For Greater Houston, Middle Skill Jobs Matter

Region's 921,000 Core Middle Skills Jobs (Entry + Advanced):

- ✓ Account for a slightly larger share of regional jobs than the national average (30% vs. 28%)
- ✓ Have outpaced the nation in growth during the current expansion (16% vs. 12%)
- ✓ Are expected to continue to grow faster over next 5 years (5% vs. 4%)

Total Greater Houston Employment  
(Millions of employee)



Source: TEconomy's analysis of EMSI 2019.2 occupational employment data.

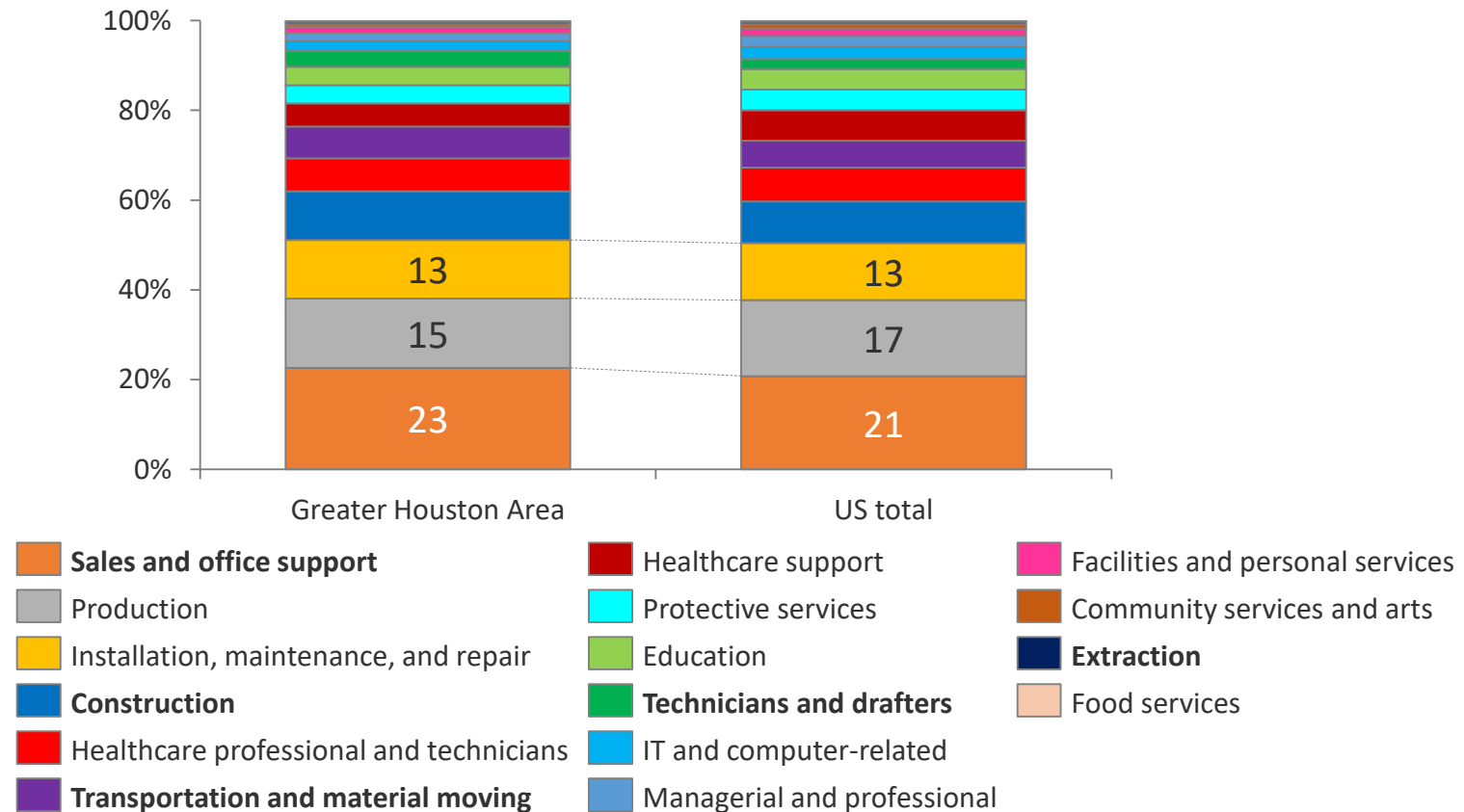


# Sales, production, maintenance and repairs occupations account for half of the middle-skill jobs in Houston

What is unique about Houston's middle skills mix?  
Region stands out with *"specialized"* relative employment concentrations (Location Quotients) in several occupational areas:

- Extraction occupations (LQ is 1.72)
- Technicians & Drafters (LQ is 1.61)
- Construction (LQ is 1.32)
- Transportation, Material Moving (LQ is 1.23)
- Sales & Office Support (LQ is 1.16)

Percentage of total middle skills employment, 2018



Source: TEconomy's analysis of EMSI 2019.2 occupational employment data.



## Four major areas stand out with especially strong middle-skill demand in Houston

- Regional “High-demand” analysis conducted considering employment concentration, wages, and projected openings finds following major middle skill areas:

- 1 — Technicians and Drafters
- 2 — Extraction
- 3 — Transport/Material Moving
- 4 — Construction

Construction  
Installation,  
Maintenance,  
Repair  
Production  
Sales and  
Office Support

- But when considering sheer volume of projected openings; high-demand index; and importance across regional industry clusters, a range of detailed occupations emerge

- 1 Electricians
- 2 First-Line Supervisors of Construction Trades and Extraction Workers
- 3 Operating Engineers and Other Construction Equipment Operators
- 4 Plumbers, Pipefitters, and Steamfitters
- 5 Industrial Machinery Mechanics
- 6 Chemical Equipment Operators and Tenders
- 7 Inspectors, Testers, Sorters, Samplers, and Weighers
- 8 Welders, Cutters, Solderers, and Brazers
- 9 Medical Secretaries
- 10 Real Estate Sales Agents
- 11 Sales Representatives, Services, All Other
- 12 Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products

- All of these are in the "Entry" level middle skills group

## Advanced Middle Skills Occupations with at Least 500 Projected Annual Openings, 2019-2024

A breadth of high-volume demand in **Advanced Middle Skills** occupations have implications for Houston's postsecondary schools/institutions



Occupational Description	Occupational Cluster	Annual Openings, 2019-2024
Heavy and Tractor-Trailer Truck Drivers	Transportation & Material Moving	5,051
Bookkeeping, Accounting, and Auditing Clerks	Sales & Office Support	3,865
Teacher Assistants	Education	2,944
Nursing Assistants	Healthcare Support	2,700
Medical Assistants	Healthcare Support	2,148
Preschool Teachers, Except Special Education	Education	1,537
Licensed Practical and Licensed Vocational Nurses	Healthcare Professionals & Technicians	1,372
Computer User Support Specialists	IT & Computer-related	1,240
Automotive Service Technicians and Mechanics	Installation, Maintenance, & Repair	1,193
Dental Assistants	Healthcare Support	1,088
HVAC and Refrigeration Mechanics and Installers	Installation, Maintenance, & Repair	827
Paralegals and Legal Assistants	Managerial & Professional	797
Hairdressers, Hairstylists, and Cosmetologists	Facilities & Personal Services	785
Clinical Laboratory Technologists and Technicians	Healthcare Professionals & Technicians	581
Telecommunications Equipment Installers and Repairers	Installation, Maintenance, & Repair	538
Firefighters	Protective Services	528





Key trends shaping the middle-skill  
workforce of the future



## What we have heard today: Houston faces a unique combination of growing middle-skills demand with a challenged supply pipeline

### Demand

- ~1M middle-skill jobs in Houston
- Expected to continue to grow over next 5 years
- 65% jobs in TX in 2020 will require more than a High School Diploma<sup>1</sup>

Case for  
middle skills in  
Houston

### Supply

- ~40% of the 'existing workforce' has not completed education beyond high school
- Up to ~75% of 'incoming workforce' may lack required skills/ education
- Evolving demographics likely to increase education gap

## Demand | Increase in level of skills and education required is the #1 force U.S. business leaders see as significantly impacting their organizations



The skills needed on the job are changing so rapidly that recruiting candidates with the right skills and learning mindset is a huge hurdle



Possession of an Associate's Degree does not translate into a new candidate's ability to actually do the job



Educational and credentialing institutions seem to have a hard time understanding and keeping up with the requirements of the industry



Our job postings often go unfilled or have huge lead times due to lack of relevant skills in the existing workforce

Supply | Support  
and resources  
required to ensure  
sufficient  
upskilling

Top three obstacles workers perceive as preventing them from taking action on upskilling themselves<sup>1</sup>



Unaffordable immediate costs



Negative effect on wages



No time to invest



## Which middle-skill supply issues are most critical for Houston to solve?


- 1 Attracting middle-skilled workers to the region
- 2 Retaining middle-skilled workers in the region
- 3 Negative perceptions of "middle-skill" careers
- 4 Effectiveness of career counseling towards high-demand occupations
- 5 Alignment of industry needs and training resources
- 6 K-12 system's ability to produce work-ready graduates
- 7 Lack of credentialing programs to produce work-ready applicants
- 8 HR practices that are not fully in sync with middle-skill job needs

Cast your vote now

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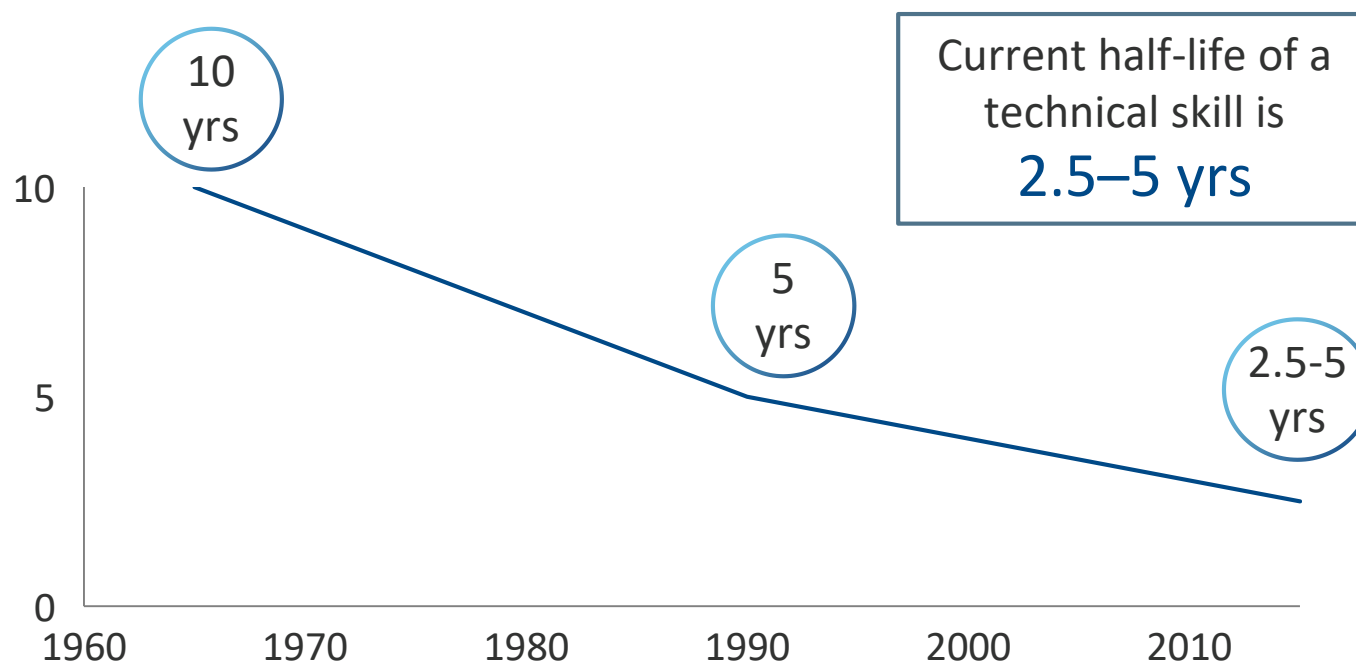
#UPSK

A target with a bullseye in the center, surrounded by concentric rings of blue, red, and yellow. Several arrows with red fletching are embedded in the target, all pointing towards the center. The background is dark and slightly blurred.

A strategy for the future also  
requires understanding the  
'moving target' of middle skills

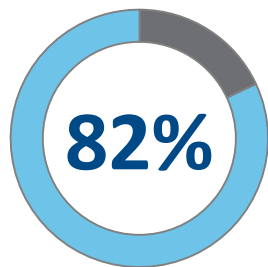
Skills becoming  
**obsolete** more  
quickly, requiring  
**regular training** to  
maintain  
competency

Engineering technical skills half life (yrs)



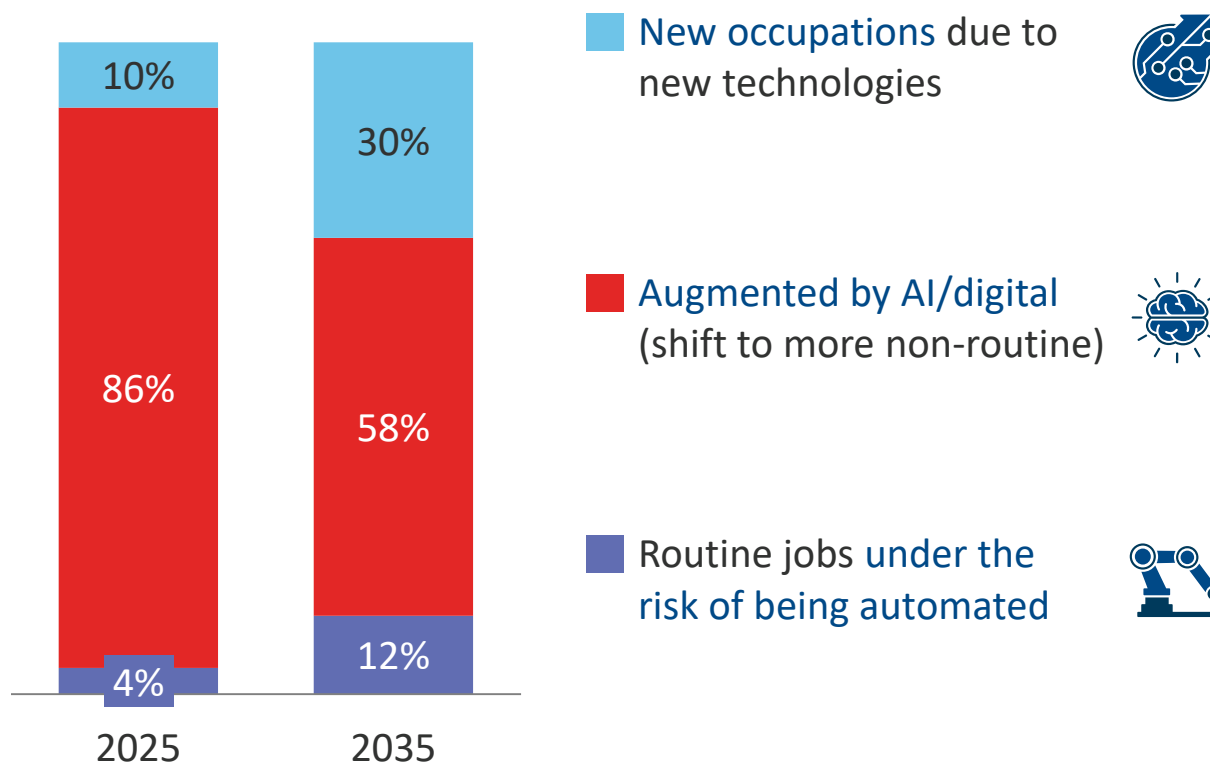


Digitization to  
profoundly  
shape all jobs



of all middle skill  
job postings  
require digital  
skills<sup>1</sup>

### Jobs affected by digitization<sup>2</sup>



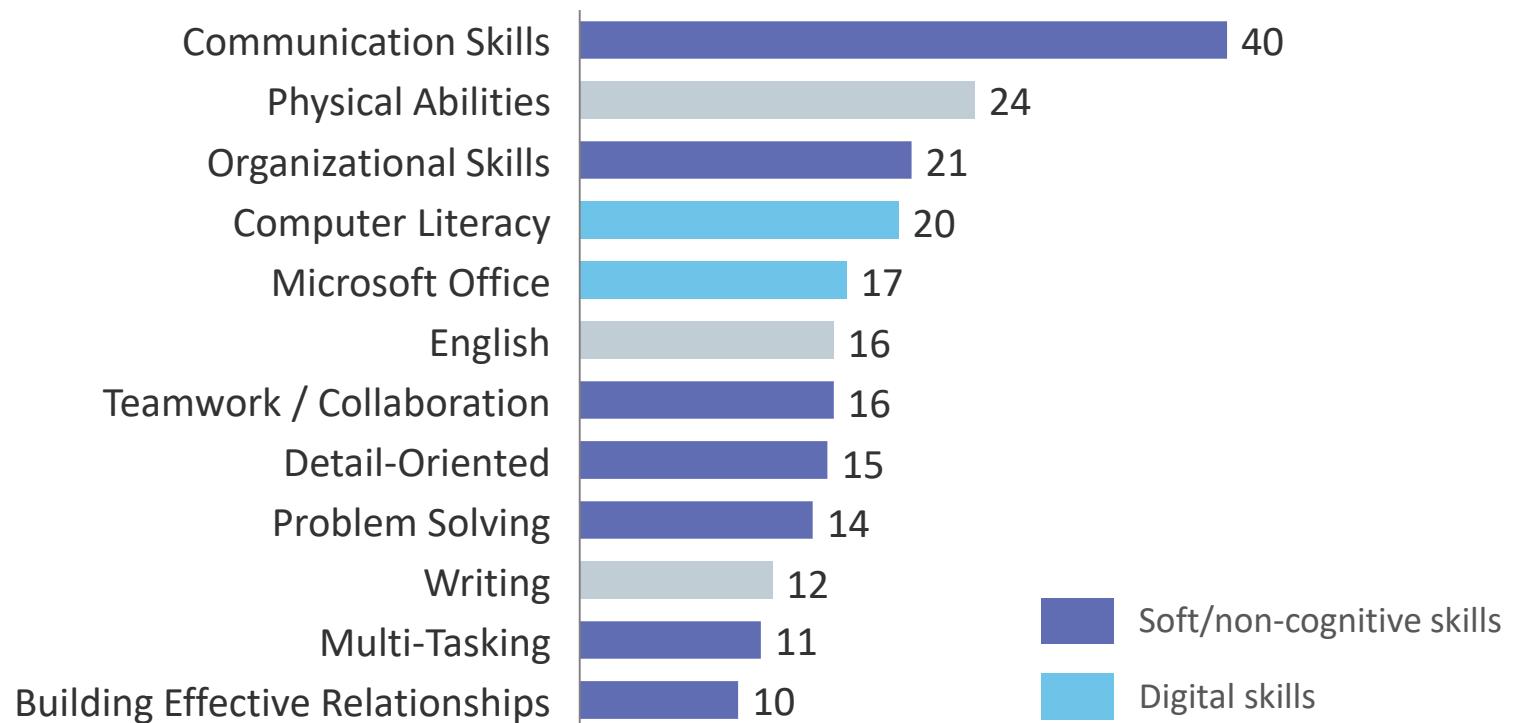
1. Digital skills includes both baseline (e.g. word processing) and advanced (e.g. coding) skills

2. "The Digital Edge: Middle-skill workers and careers", Burning Glass Technologies 2017; World Economic Forum (2017)

In addition to basic digital skills, significant number of middle-skill jobs requiring **soft skills**



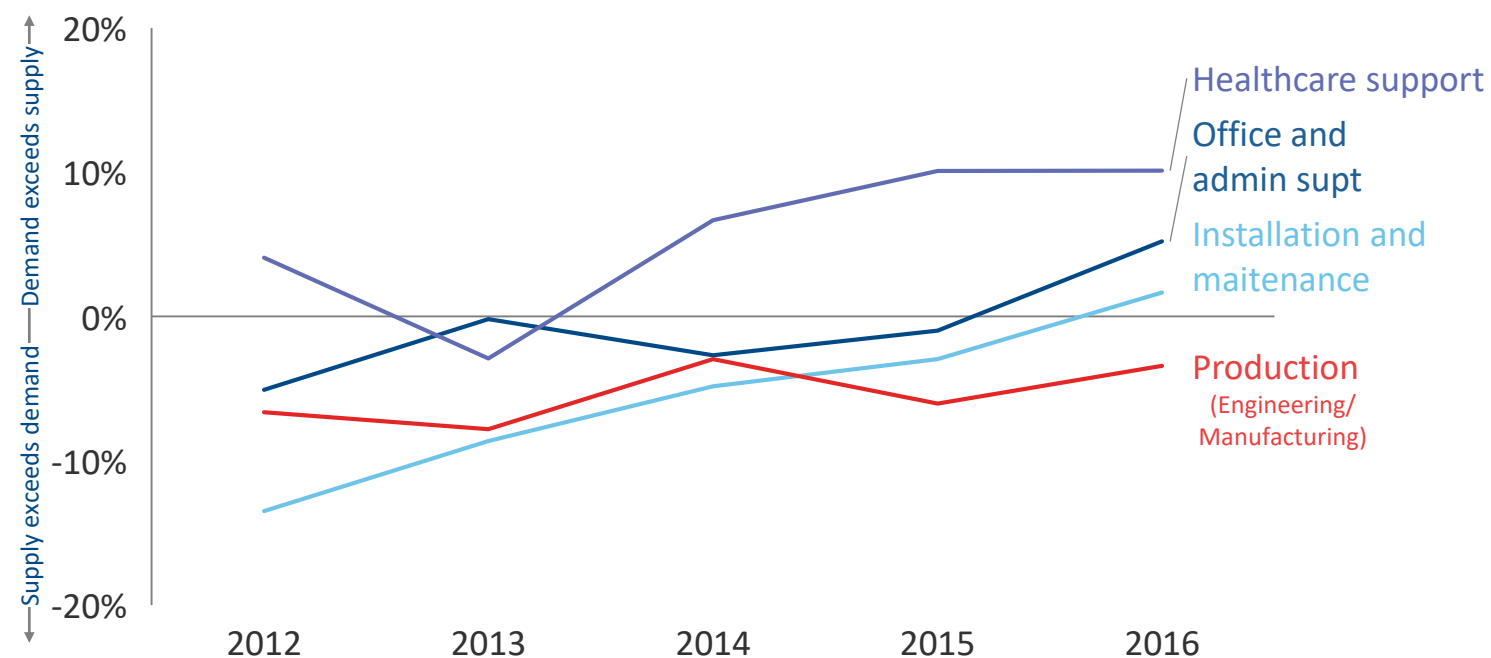
Houston middle skills job postings with specific skills listed (%)



Pace of change  
 and economic  
 uncertainty make  
 it difficult to  
 predict talent  
 requirements



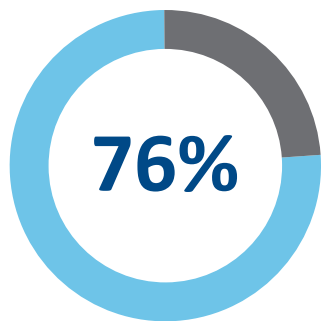
Demand and supply of select occupations in the US over time



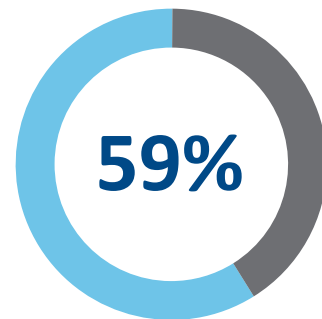
Note: Report showcases 'all skills' gaps, and not just 'middle skills'  
 Source: "Different Skills, Different Gaps" – Burning Glass Technologies and US Chamber of Commerce Foundation March 2018



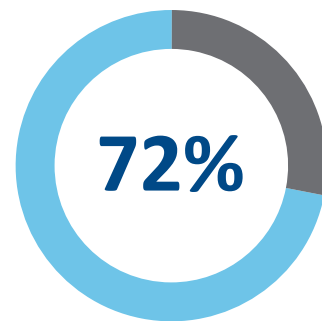
Incoming workforce has different expectations of the work experience and atmosphere



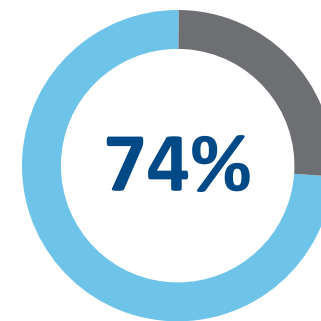
Prioritize professional development elements of company culture



Of the workforce will be made up of millennials and gen Z by 2020<sup>1</sup>



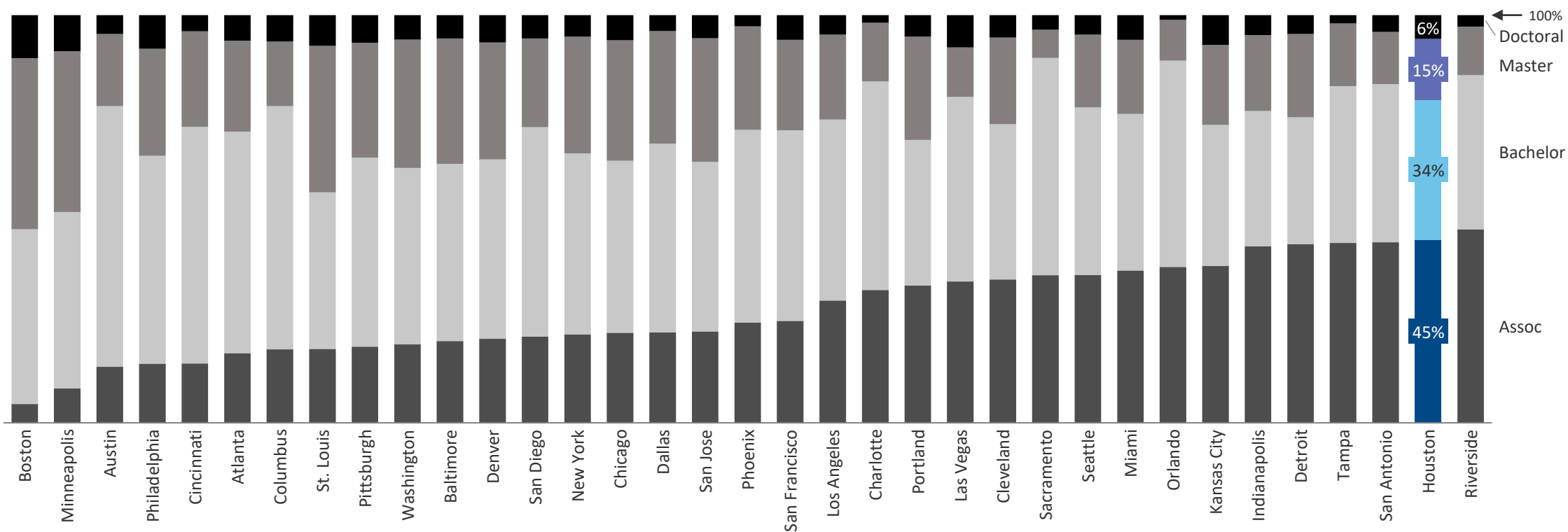
Would like to be their own boss



Want a more flexible work schedule

## To meet middle-skills gap, Houston has heavily invested in Associates degrees

Proportion of 2017 degree production by type

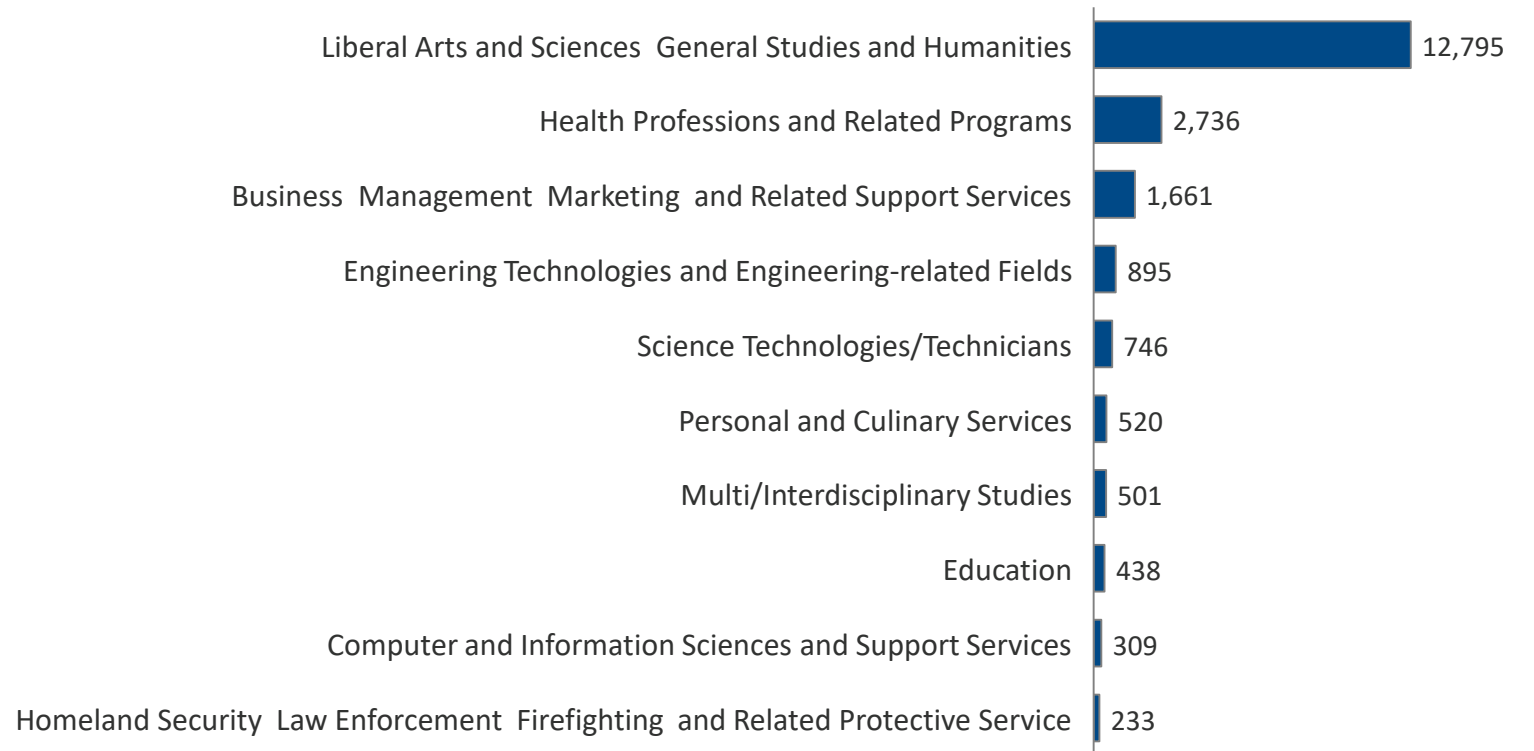


Note: Out of top 35 MSAs by workforce size

Source: NCES, IPEDs; US Bureau of Labor Statistics; BCG analysis

...but 57% of the Associate's Degree completions are in Liberal Arts/ Humanities causing **credentials mismatch** relative to demand

### Associate's Degree Completions by Program (Houston MSA, 2017)

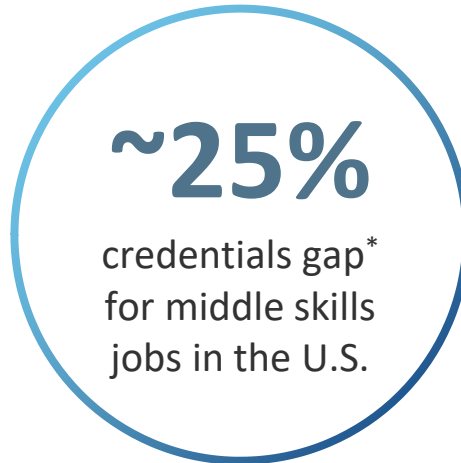


Note: Only top 10 programs shown (comprises 95% of degree completions); Breakdown of degree completions has been stable from 2015-2017 (<2% change for any program)

Source: IPEDS Data (2017)



Houston middle skilled jobs often come with **elevated degree requirements**, making positions harder to fill



## How this impacts both employers & jobs-seekers



Jobs with elevated requirements take more time to fill



Does not provide equal 'opportunity for all'; those with less formal credentials may not be less qualified



Wage inflation & higher employee turnover, as employers pay a premium for four-year degrees

Note: Credentials gap exists when employers list bachelor's degree requirement for a wide range of jobs, for occupations which could be undertaken by workers without a college degree.

Source: Burning Glass (2018)

## Which of these trends pose the greatest challenge to your organization or business today?


- 1 Skills becoming obsolete more quickly
- 2 Increasing requirement for digital skills
- 3 Requirement for soft skills/non-cognitive skills
- 4 Uncertainty in forward-looking business needs / talent demands
- 5 Changing expectations of younger incoming workforce
- 6 Mismatch between job demands and credentialing programs
- 7 Elevated degree requirements in job postings

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Looking ahead: How are cities/organizations responding to the growing challenges of middle-skills development?

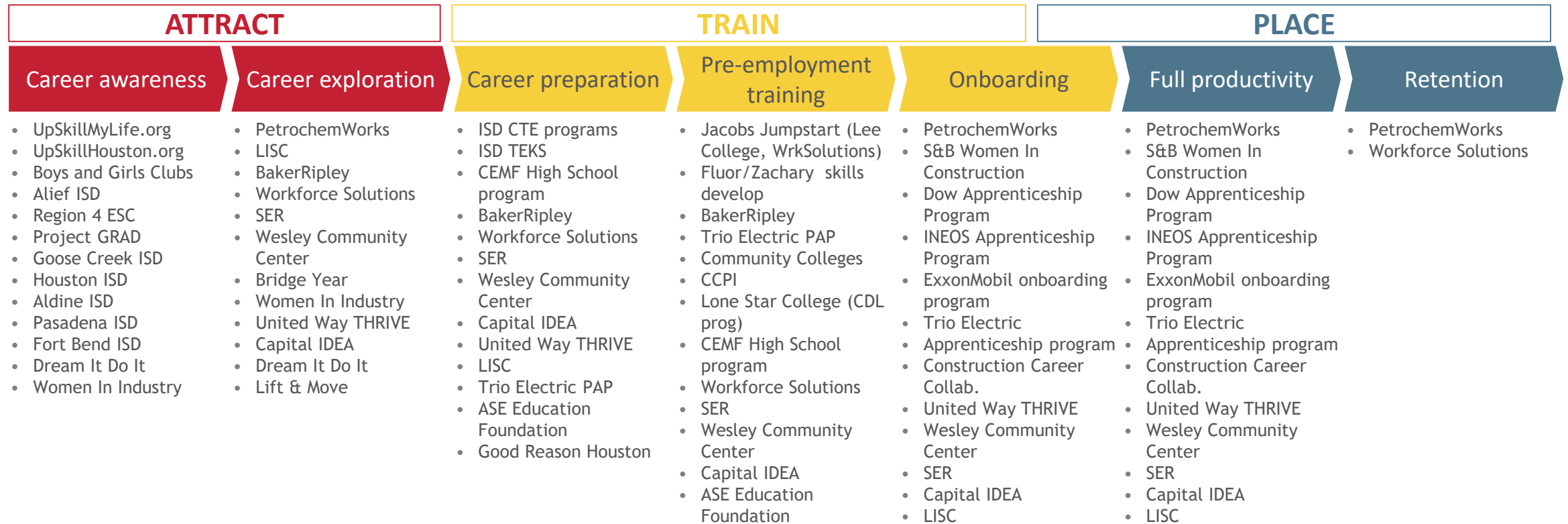


Middle-skills challenges not unique to Houston, various organizations making progress, but opportunity to do more



Note: Non-exhaustive list

# Growing network of organizations in Houston driving middle skill workforce development





A photograph of a paved road that curves through rolling green hills. The sky is overcast with grey clouds. The text is overlaid on the image, with the word 'accelerate' highlighted in green.

Yet, multiple efforts unable to meet all  
student, worker, and employer needs ...  
how can UpSkill **accelerate** their impact?



## What role can UpSkill play in the future to "accelerate" impact?

- 1 Bringing various stakeholders from the Houston community together
- 2 Building awareness of careers that do not require four year degrees
- 3 Facilitating transparency of data on efforts to reskill/upskill in the region, and demand-supply gaps
- 4 Helping create work-based learning opportunities through industry collaboratives
- 5 Helping steer educators towards employers' needs
- 6 Improving the employability of applicants through basic skills & training
- 7 Influencing businesses, educators, and community organizations to work towards common workforce development goals

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Q & A

