WHY
Are We
Here?
Manufacturing’s SKILLS GAP

Nearly 3.5 million manufacturing jobs will need to be filled over the next decade. The skills gap is expected to leave 2 million of those jobs unfilled.

Hiring Skilled Workers Isn’t Easy

- It can take 90+ days to recruit highly skilled workers
- 70% of executives say their current employees are not sufficient in technology & computer skills

Leading Factors In The Skills Gap

- Retirement of baby boomers
- Strength of the economy
- Attractiveness of the industry

In 2011, 600K jobs remained unfilled due to the skills gap

6 out of 10

- Open skilled production positions are unfilled due to talent shortage

Skills Gap Impact On Overall Economy

- Every job in manufacturing creates 2.5 new jobs in local goods and services
- 82% of executives believe the skills gap will impact their ability to meet customer demand

Nearly nine in every 10 millennials live in emerging economies. Chinese millennials alone outnumber the entire population of the US.
The Countries With The Most STEM Graduates
Recent graduates in Science, Technology, Engineering & Mathematics (2016)

- China: 4.7m
- India: 2.6m
- United States: 568,000
- Russia: 561,000
- Iran: 335,000
- Indonesia: 206,000
- Japan: 195,000

Source: World Economic Forum
Figure 2-24
First university natural sciences and engineering degrees, by selected country or economy: 2000–14
Figure 3: Fraction of engineering graduates entering the manufacturing sector corresponding to their discipline
(Source HESA DLHE)

(Engineering graduates for UK Manufacturing, Dixon 2017)
FIG. 1.6 // Percentage of Women Retained in Career Field Over Time

- **Professional Non-STEM Job**
- **Professional STEM Job**

Rerendered from Glass et al., 2013
Women in manufacturing
Stepping up to make an impact that matters
Industry 4.0: Bringing the jobs back

Industry 4.0 could create millions of new jobs

Industry 4.0: Bringing the jobs back

“Automation doesn't cost jobs” German Industry 4.0 report

Industry 4.0 will promote jobs growth

Industry 4.0 Holds The Key To Closing The Manufacturing Industry's Skills Gap
The Long-Term Jobs Killer Is Automation. Not China. It's Automation. UK manufacturing has lost 600,000 jobs. Rise of the machines threatens 40% of jobs in Ireland. The jobs and cities most at risk from Industry 4.0 take 800 million jobs by 2030. U.S. has lost 5 million manufacturing jobs. 25% of jobs in the US.
Facebook job offers 'shunned by top talent after data scandal'
Learning Factory

Industry
- Connect industry with faculty
- Understand industry’s needs
- Work on real-world problems
- Keep on top of latest research
- Identify world-class engineers
- Engage in students’ learning
- Pipeline for future employees
- Out of the box ideas/thinking

Faculty
- Help link theory and practice
- Enrich classroom experience
- Increase student engagement

Students
Work Experience

10-LEVEL FRAMEWORK