

# Northeast **A**dvanced **M**anufacturing **C**onsortium

*The **N**ortheast **A**dvanced **M**anufacturing **C**onsortium (**NAMC**) is a collaboration among industry, academia, and government that was created in 2012 to define and implement the Commonwealth's advanced manufacturing strategy within the Northeast region of Massachusetts.*

## **Manufacturing Career Pathways**

***Apprenticeships** – NAMC actively works with local manufacturers to enroll new hires and existing workers into registered apprenticeship training programs.*

***Training Programs** - are developed with the employer in mind. All of our training has been vetted by an advisory board of Northeast advanced manufacturers to ensure that the skills learned are applicable to the workplace.*

*Choose a job you love and you will never work a day in your life.  
-Confucius*



# WHY a Career in **ADVANCED MANUFACTURING** ?



**Innovation & Technology** – have expanded in Massachusetts  
(Critical Industry)

**1900+ Manufacturer's** in Northeast – steady supply of employment opportunities

**Manufacturing workers** take home on average **\$28K MORE** than non-manufacturing workers - MA

Today, careers in manufacturing require – **HIGHER SKILL LEVELS** – Training Programs to foster sustainable career growth and opportunities.



# Machining Pathway



## *Wages Grow with Increased Educational Attainment & New Opportunities!*

| <i>Occupation Title</i>                | <i>Computer-Controlled Machine Tool Operators, Metal and Plastic</i> | <i>Machinist (Mid Career)</i>                   | <i>Computer Numerically Controlled Machine Tool Programmers</i> | <i>Mechanical Engineering Technicians</i> | <i>Mechanical Engineers</i> | <i>Director of Engineering</i> |
|--|--|---|---|---|-----------------------------|--------------------------------|
| <i>MA Employment</i>                   | <i>2,370</i>   | <i>7,900</i>                                    | <i>470</i>  | <i>3600</i>                               | <i>9,490</i>                | <i>8,190</i>                   |
| <i>Hourly Wage</i>                     | <i>\$24.55</i>   | <i>\$25.43</i>                                  | <i>\$32.12</i>  | <i>\$32.62</i>                            | <i>\$46.13</i>              | <i>\$73.70</i>                 |
| <i>Annual Wage</i>                     | <i>\$51,060</i>  | <i>\$52,900</i>                                 | <i>\$66,810</i>   | <i>\$67,840</i>                           | <i>\$95,940</i>             | <i>\$153,290</i>               |
| <i>Level of Educational Attainment</i> | <i>HS, GED, Hiset &amp; Short-term Training</i>                      | <i>HS, GED, Hiset &amp; Short-term Training</i> | <i>HS, GED, Hiset &amp; Short-term Training</i>                 | <i>Associate's degree</i>                 | <i>Bachelor's degree</i>    | <i>Bachelor's degree</i>       |

*Opportunities to enter Machining Pathways - CNC Operator or Mid Career Machinist*

*Both need short-term training before advancing to a CNC Machine Tool Programmer*

*Mechanical Engineering Technicians require - Associates Degree – Mechanical Engineering Technology*

*Mechanical Engineers require - Bachelor's Degree – Mechanical Engineering Technology*

*Mechanical Engineers who demonstrate leadership abilities maybe promoted or find higher level positions*

# Welding Pathway



## *Wages Grow with Experience!*

| <i>Welders, Cutters, Solders, and Braziers</i> | <i>Entry Level</i>                              | <i>Mid Career</i> | <i>Experienced</i> |
|--|---|-------------------|--------------------|
| <i>MA Employment</i>                           | <i>3,380</i>                                    |                   |                    |
| <i>Hourly Wage</i>                             | <i>\$15.89</i>                                  | <i>\$24.74</i>    | <i>\$38.67</i>     |
| <i>Annual Wage</i>                             | <i>\$33,060</i>                                 | <i>\$51,450</i>   | <i>\$80,430</i>    |
| <i>Level of Educational Attainment</i>         | <i>HS, GED, HiSet &amp; Short-term Training</i> | <i>Experience</i> | <i>Experience</i>  |

*Future Welders - High School/GED, HiSet - with short-term occupational training*

*Welders will take on more complex projects as they gain **on-the job** experience*

*Welders will advance their careers through wage gains*



# Machinist Pathway



## *Wages grow with Experience!*

| <i>Machinist</i>                       | <i>Entry Level</i>                              | <i>Mid Career</i> | <i>Experienced</i> |
|--|---|-------------------|--------------------|
| <i>MA Employment</i>                   |   | <i>7,900</i>      |                    |
| <i>Hourly Wage</i>                     | <i>\$16.73</i>                                  | <i>\$25.43</i>    | <i>\$38.24</i>     |
| <i>Annual Wage</i>                     | <i>\$34,790</i>                                 | <i>\$52,900</i>   | <i>\$79,540</i>    |
| <i>Level of Educational Attainment</i> | <i>HS, GED, HiSet &amp; Short-term Training</i> | <i>Experience</i> | <i>Experience</i>  |

**Future Machinists** - High School /GED, HiSet with short-term occupational training

**Machinists** start taking on more complex projects as they gain **on-the-job** experience

**Machinists** can advance their careers through wage gains



# Quality Pathway



## Wages Grow with Increased Educational Attainment New Opportunities!

| Occupation Title                | Quality Control Inspector            | Quality Assurance Supervisor | Quality Control Engineering Technician | Validation Engineer | Quality Control Manager | Director of Engineering |
|---------------------------------|--------------------------------------|------------------------------|--|---------------------|-------------------------|-------------------------|
| MA Employment                   | 10,160                               | 11,500*                      | 3,130                                  | 3,090               | 5,590                   | 8,190                   |
| Hourly Wage                     | \$21.95                              | \$31.68                      | \$28.46                                | \$52.38             | \$58.15                 | \$73.70                 |
| Annual Wage                     | \$45,660                             | \$65,900                     | \$59,190                               | \$108,960           | \$120,960               | \$153,290               |
| Level of Educational Attainment | HS, GED, HiSet & Short-term Training | Associate's degree           | Bachelor's degree                      | Bachelor's degree   | Bachelor's degree       | Bachelor's degree       |

- **Quality Control Inspectors - High School, GED, HiSet with short-term occupational training**
- **Quality Control Inspectors** who have demonstrated workplace responsibility & leadership can receive a promotion - **Quality Control Supervisor**
- **Quality Control Supervisors** are responsible for the supervision and productive of Assemblers
- **Quality Control Engineering Technicians - Associate's Degree - Industrial Engineering Technology**

- **Validation Engineers require - Bachelor's Degree - Industrial Engineering Technology**
- **Validation Engineers** who demonstrate leadership abilities maybe promoted or find employment as - **Quality Control Manager**
- **Quality Control Managers** who demonstrate leadership abilities maybe promoted or find employment as a **Director of Engineering**

# Assemblers, Electrical/Electronic Engineering Technicians, Electrical Engineering Pathway

## Wages Grow with Increased Educational Attainment & New Opportunities!

| Occupation Title                | Electromechanical Equipment Assemblers | Team Leader | Electrical and Electronics Engineering Technicians | Electrical Engineers | Electronics Engineers | Director of Engineering |
|---------------------------------|--|-------------|--|----------------------|-----------------------|-------------------------|
| MA Employment                   | 10,330                                 | 11,500*     | 3,600  | 6,960                | 3,770                 | 8,190                   |
| Hourly Wage                     | \$19.25                                | \$31.68     | \$32.62  | \$55.47              | \$55.90               | \$73.70                 |
| Annual Wage                     | \$40,040                               | \$65,900    | \$67,840   | \$115,370            | \$116,270             | \$153,290               |
| Level of Educational Attainment | HS, GED, Hise & Short-term Training    | Experience  | Associate's Degree                                 | Bachelor's Degree    | Bachelor's Degree     | Bachelor's Degree       |

- **Future Assemblers** - High School, GED, HiSet, with short-term occupational training to start their careers.
- **Assemblers** who have demonstrated workplace responsibility and leadership can qualify for promotion - **Team Leader**
- **Team Leaders** are responsible for the supervision and productive of Assemblers

- **Electrical & Electronic Engineering Technicians** - Associate's Degree - Electrical or Electronics Engineering Technology
- **Electrical Engineers** - Bachelor's Degree - Electrical Engineering Technology
- **Electronics Engineers** - Bachelor's Degree - Electronics Engineering Technology
- **Electrical Engineers and/or Electronics Engineer** who demonstrate leadership abilities maybe promoted or find employment as a **Director of Engineering**

# Supply Chain

development  
partner material technology  
organization service management raw user planning global  
network conversion remote layer inventory system business storage process activity resources original value  
SUPPLY market function complex component people  
CHAIN  
process activity resources original value  
modeling demand collaboration distribution  
product design provider logistics



# Supply Chain Pathway

## Wages Grow with Increased Educational Attainment & New Opportunities!

| Occupation Title                | Procurement Clerks      | Accounts Payable Supervisor | Buyers and Purchasing Agents | Assistant Purchasing Managers | Purchasing Managers | Chief Procurement Officer |
|---------------------------------|-------------------------|-----------------------------|------------------------------|-------------------------------|---------------------|---------------------------|
| MA Employment                   | 1,170                   | 40,160*                     | 9,190                        | 3020                          | 3020                | 3020                      |
| Hourly Wage                     | \$22.67                 | \$30.67                     | \$34.96                      | \$35.18                       | \$59.80             | \$93.97                   |
| Annual Wage                     | \$47,160                | \$63,790                    | \$72,710                     | \$73,170                      | \$124,390           | \$195,450                 |
| Level of Educational Attainment | High School, GED, Hiset | Experience                  | Associates Degree            | Bachelor's Degree             | Bachelor's Degree   | Bachelor's Degree         |

- **Future Procurement Clerks - High School, GED, HiSet** with short-term occupational training to start their careers
- **Procurement Clerks** who have demonstrated workplace responsibility and leadership can receive promotion to **Accounts Payable Supervisor**
- **Accounts Payable Supervisors** are responsible for the supervision of **procurement clerks**

- **Buyers & Purchasing Agents - Associate's Degree** in either business, finance, or supply chain management.
- **Assistant Purchasing Managers & Purchasing Managers - Bachelor's Degree** in either business, finance, or supply chain management.
- **Purchasing Managers** who demonstrate leadership abilities maybe promoted or find employment as a **Chief Procurement Officers**.

# Is a CAREER in Manufacturing for YOU?

**Manufacturing companies use advanced production techniques to develop a wide range of products - we use everyday. In manufacturing you will enjoy a career in a high-tech machinery and cutting edge software in a variety of in-demand markets: *Medical, Information Technology, Defense, Renewable Energy***

**If you enjoy making things, or want to be apart of a company that does, a career in manufacturing May be ideal for you. A bonus – in the manufacturing - *the ability to transfer your skill set to various roles within company.***

**While many jobs involve working directly on machines, they are not the only career opportunities. *The manufacturing industry employs – Professionals – Marketing, Sales Financial, Administration, Human Resources to name a few.***

For additional information visit: [www.namcnetwork.com](http://www.namcnetwork.com)



# Sources

All occupations are based on the Standard Occupational Classification System (SOC) Code.

Some occupations within the career pathways are classified within a SOC Code with several other occupations.

These occupations are:

**Accounts Payable Supervisor – SOC Code 43-1011 First-Line Supervisor of Office and Administrative Support Workers**

**Director of Engineering – SOC Code 11-9041 Architectural and Engineering Managers**

**Machinist I, II, III – SOC Code 51-4041 Machinists**

**Quality Assurance Supervisor – SOC Code 51-1011 First-Line Supervisors of Production and Operating Workers**

**Quality Control Engineering Technician - SOC Code 17-3026 Industrial Engineering Technologists and Technicians**

**Quality Control Inspectors – SOC Code 51-9061 Inspectors, Testers, Sorters, Samplers, and Weighers**

**Quality Control Manager – SOC Code 11-3051 Industrial Production Managers**

**Team Leader – SOC Code 51-1011 First-Line Supervisors of Production and Operating Workers**

**Welder I, II, III – SOC Code 51-4121 Welders, Soldering, and Brazing Machine Setters , Operators, and Tenders**

Sources used to complete occupational pathways:

**Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics (OES), Massachusetts, May 2019, [bls.gov/oes](https://www.bls.gov/oes)**

**Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, [bls.gov/ohh](https://www.bls.gov/ohh)**

**Employment & Training Administration, U.S. Department of Labor, O\*Net Online, [onetonline.org](https://www.onetonline.org)**

For information please go to: [www.namcnetwork.com](https://www.namcnetwork.com)

