

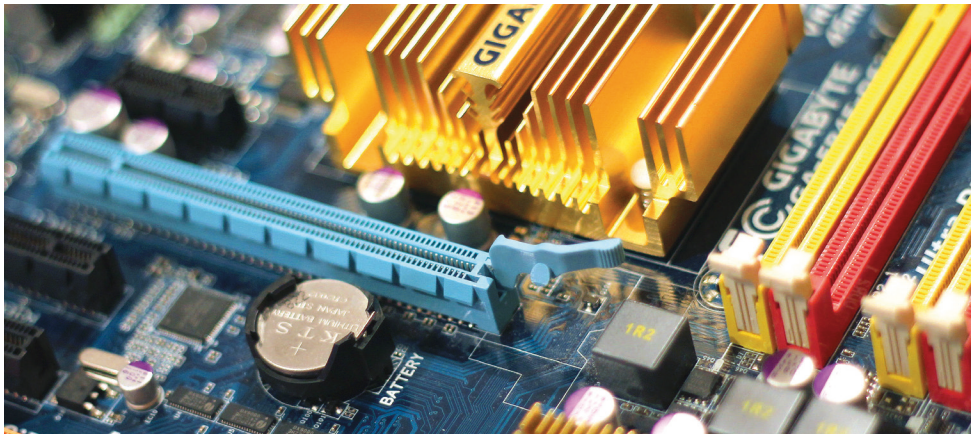
# COMPUTERS & ELECTRONICS

## Industry Strength

The computers and electronics industry – semiconductors in particular – is one of Greater Portland’s powerhouse sectors. The industry is part of a technological ecosystem that includes global corporations, as well as small- and medium-sized companies. This ecosystem produces components that provide crucial technology to the rest of the world.

## Silicon Forest

Decades of investment in Greater Portland by Intel and Tektronix has cultivated a forest of thousands of technology firms and their suppliers. Tektronix, the oscilloscope manufacturer known as the godfather of Oregon’s tech industry, was founded in Portland in 1946 and moved into its Beaverton campus in 1959. Since Intel’s first investment in Oregon in 1974, the chipmaker’s capital investments in the state have topped \$40 billion.



## LARGEST COMPUTERS + ELECTRONICS FIRMS IN GREATER PORTLAND

- |                                    |  |   |
|------------------------------------|--|---|
| 1. Intel<br>20,000 Employees       | 5. Mentor Graphics<br>1,043 Employees      | 9. Jireh Semiconductor<br>474 Employees |
| 2. Lam Research<br>3,000 Employees | 6. ON Semiconductor<br>845 Employees       | 10. WaferTech, LLC<br>448 Employees     |
| 3. Tektronix<br>1,293 Employees    | 7. Qorvo<br>710 Employees                  | 11. Applied Materials<br>394 Employees  |
| 4. Xerox<br>1,069 Employees        | 8. Microchip Technologies<br>553 Employees | 12. SEH America, Inc<br>373 Employees   |

—PBJ Book of Lists, The Oregonian, 2018

## BY THE NUMBERS

# 35,451

Total number of jobs in computers and electronics  
—JIAC Adv. Manufacturing Report

# 183

 Computers and electronics firms

# \$10.2

 Billion in international exports

# \$37.6

 Billion made in sales revenue

# 46%

The share of Greater Portland’s labor pool that works in STEM fields.

—Town Charts





Intel clean room floor

## SUCCESS STORIES



### INTEL

The Intel Ronler Acres campus in Hillsboro is home to some of the most advanced R&D in the world. As the hub of Intel's global R&D operations, Greater Portland has grown into an epicenter for the semiconductor industry and its supply chain. More than 30 Intel suppliers operate in Hillsboro, adding thousands of jobs and millions of dollars in investment to Intel's contribution as Oregon's largest private employer.



### HP 3D OPEN MATERIALS + APPLICATIONS LAB

In 2016, HP unveiled its Multi Jet Fusion technology, which could revolutionize the 3D printing world and mainstream manufacturing. The new technology is up to 10 times faster than competing products, and has the ability to produce industrial-grade parts. HP's Vancouver office is home to the company's new Open Materials and Applications Lab, where HP's material partners collaborate with engineers to develop, test and receive feedback on new powders for the new 3D printing technology.

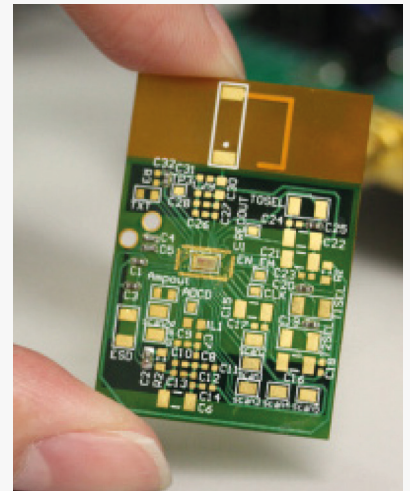


### LAM RESEARCH

As the world's second-largest semiconductor equipment manufacturer, Lam's products help enable the trillion-dollar global electronics industry. Lam's research campus in Tualatin employs more than 3,000 engineers, physicists and other highly educated workers. The newly expanded campus now spans 500,000 square feet and includes two new offices buildings and an updated R&D lab.

### EXPERTISE IN ACTION

A new "system on a chip" developed at Oregon State University can provide sophisticated monitoring of medical vital signs with technology the size of a postage stamp.



“Portland is the #1 place for business and careers”

—Forbes

# COMPUTERS & ELECTRONICS ECOSYSTEM

## CIRCUITS

Accelerant Networks  
Sunstone Circuits  
Viasystems Technologies Corp.  
WRS Materials Möbius Microfarms  
Z Technology, Inc.

## DISCRETE DEVICE MANUFACTURERS

Intel  
Jireh Semiconductor  
Lattice Semiconductor Corp.  
Micron Semiconductor Products  
ON Semiconductor  
Qorvo  
WaferTech

## SEMICONDUCTOR SUPPLIERS

Advantest  
AGC Electronics America  
Applied Materials  
ASM America  
ASML US Inc.  
BeSang  
Cabot Microelectronics  
Cascade Microtech  
CoorsTek  
Daifuku America  
Disco High Tech America  
EBARA Technologies, Inc.  
Edwards Vacuum  
From Factor  
Hitachi High Technologies  
Horiba  
JSR Micro  
KLA Tencor  
Kokusai Semiconductor Equipment

KoMiCo  
Lam Research Corp.  
Linde  
Mega Fluid Systems  
Microchip Technology  
Milwaukee Electronics  
Nikon Precision  
Quantum Clean  
Screen SPE  
Sumitomo Semiconductor Materials  
Thermo Fisher Scientific  
TOK America  
Tokai Carbon  
Tokyo Electron America, Inc.

## ELECTRONICS

Electronic Controls  
FEI  
FLIR Systems  
Foxconn Electronics  
JAE OR Inc.  
Kyocera Tycom  
Leyard Optoelectronic  
Mentor Graphics, a Siemens Business  
Planar Systems  
Silicon Forest Electronics Inc.  
Vanguard EMS

## COMPUTER PERIPHERALS

APCON Inc.  
Hitachi Kokusai Electric America  
Pixelworks Inc.  
Honeywell Linear & Planar Systems  
Triad Speakers Inc.

## LASER TECHNOLOGY

Applied Laser Technology Inc.  
Electro Scientific Industries (ESI)





## THE BREAKDOWN: ENGINEERING/RELATED OCCUPATIONS IN GREATER PORTLAND

ENGINEERING MANAGERS:  
**3,310 Employees**

COMPUTER HARDWARE  
ENGINEERS:  
**1,370 Employees**

ELECTRICAL ENGINEERS:  
**2,570 Employees**

ELECTRONICS ENGINEERS:  
**5,410 Employees**

INDUSTRIAL ENGINEERS:  
**3,530 Employees**

ENGINEERS ALL OTHER:  
**2,250 Employees**

ELECTRICAL + ELECTRONICS  
ENGINEERING TECHNICIANS:  
**3,120 Employees**

ENGINEERING TECHNICIANS  
EXCEPT DRAFTERS, ALL OTHER:  
**1,060 Employees**

ELECTRICAL + ELECTRONIC  
REPAIRERS FOR COMMERCIAL +  
INDUSTRIAL EQUIPMENT:  
**960 Employees**

1ST LINE SUPERVISORS:  
**4,700 Employees**

SKILLED ASSEMBLY:  
**12,630 Employees**

SKILLED INSPECTORS:  
**3,880 Employees**

SEMICONDUCTOR  
PROCESSORS:  
**3,990 Employees**

## EDUCATED & ENGAGED

### HOW GREATER PORTLAND STACKS UP TO THE NATIONAL AVERAGE



The concentration of  
computer hardware  
engineers



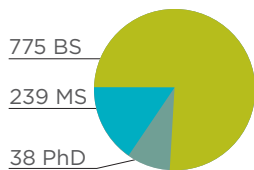
The concentration of  
semiconductor  
processors

### ENGINEERING GRADUATES BY UNIVERSITY

■ Bachelor's Degrees ■ Master's Degrees ■ Doctorates

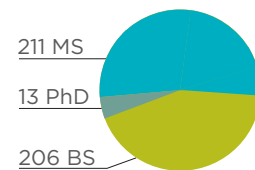
#### Oregon State University

Total degrees  
**1,052**



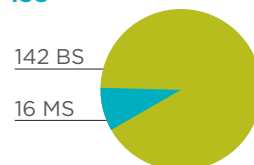
#### Portland State University

Total degrees  
**443**



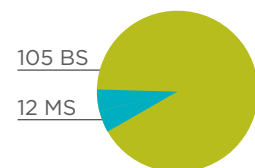
#### Washington State University Vancouver

Total degrees  
**158**



#### University of Portland

Total degrees  
**117**

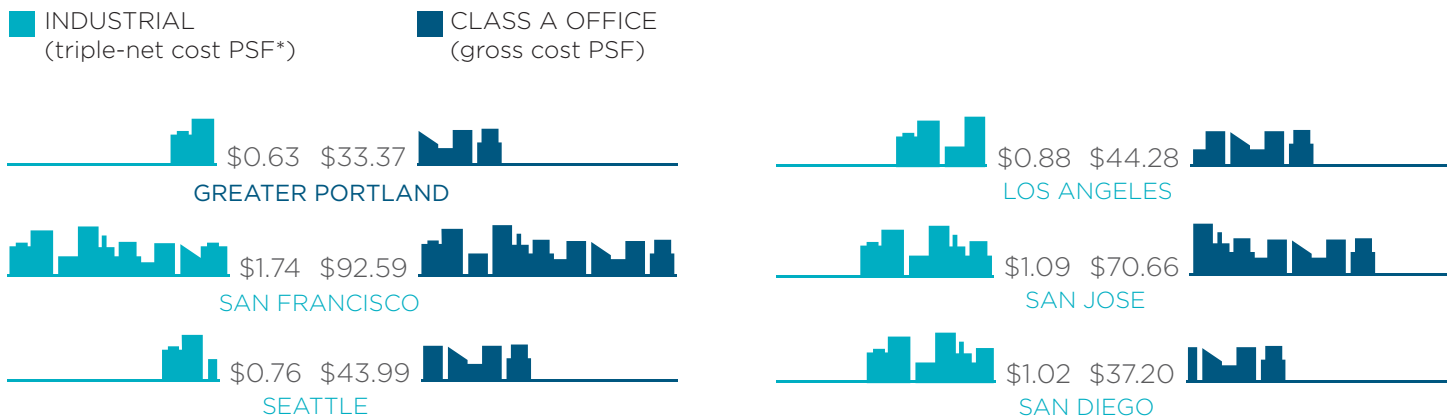


# WEST COAST VALUE

## #1 development market in the U.S.

Greater Portland is the nation's top market for development potential, according to the Urban Land Institute's 2020 Emerging Trends in Real Estate report.

### COMPETITIVE COMMERCIAL REAL ESTATE COSTS



JLL, Q3 2019

### PEER CITY COMPARISON CHART

#### COST OF LIVING INDEX (US=100)

Living in Greater Portland is **less expensive** than its peer regions.

C2ER, COLI report 2019



#### MEDIAN HOME VALUES

Greater Portland is an **incredible value** compared to its peer regions.

National Association of Realtors

# GLOBAL CONNECTIONS

## America's Best Airport

Portland International Airport has been voted "America's Best Airport" in Travel+Leisure magazine's reader survey seven years in a row (2013-2019), and was ranked No. 1 in airport satisfaction by J.D. Power (Sept. 2019).



**74** Non-stop destinations | **263** Daily non-stop passenger departures

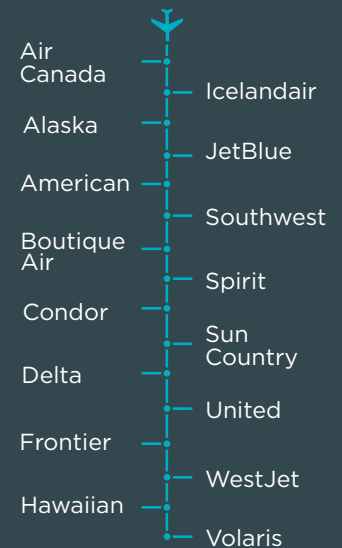
### GO INTERNATIONAL NON-STOP

11 international non-stop destinations reachable from Portland including:

- |                        |                           |                   |
|------------------------|---------------------------|-------------------|
| Amsterdam, Netherlands | London, United Kingdom    | Tokyo, Japan      |
| Calgary, Canada        | Puerto Vallarta, Mexico   | Toronto, Canada   |
| Frankfurt, Germany     | Reykjavik, Iceland        | Vancouver, Canada |
| Guadalajara, Mexico    | San Jose del Cabo, Mexico |                   |

### 16 Airlines

Key international & domestic passenger carriers serve travelers at Portland International Airport:



*Innovata schedules for Summer 2017*

### MEET THE TEAM



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