



WHERE PEOPLE & TECHNOLOGY PROSPER

**Oakland County
Michigan**
Emerging Sectors'



Robotics & Automation

Automating Your Future



Oakland County Michigan Information

- ◆ Oakland County has 46% of Michigan R&D Facilities
- ◆ Michigan ranks second in the nation in R&D spending
- ◆ Michigan companies file over 3,000 patents a year placing it in the top 10 states for total number of patents granted

Organizations To Support You:

- ◆ Automation Alley - Southeast Michigan's Regional Technology Cluster
- ◆ Automated Imaging Associates (AIA)
- ◆ Michigan Manufacturers Association
- ◆ Michigan's Technology Tri-Corridor
- ◆ MMTC - Michigan Manufacturing Technology Center
- ◆ National Center for Manufacturing Sciences (NCMS)
- ◆ National Institute of Industrial Technology (NAIT)
- ◆ Robotics Industry Association (RIA) World Headquarters
- ◆ Society of Manufacturing Engineers Automation & Assembly Technical Community
- ◆ TARDEC's National Automotive Center (NAC)
- ◆ U.S. Army Tank-Automotive Research, Development and Engineering Center (TARDEC)
- ◆ U.S. Tank-Automotive and Armaments Command (TACOM)



Courtesy Kawasaki

Workforce: Educated, Innovative & Motivated

- ◆ Over 40% of Oakland County residents have college degrees (national average is about 26%)
- ◆ Oakland County has the third highest number of high-tech workers in the nation and twice the corporate R&D professionals compared to the national average
- ◆ Population of Michigan's workforce: 5.1 million
- ◆ 15 public universities, 60 independent universities and colleges, 30 community colleges statewide
- ◆ Over 96,000 college degrees are granted every year in Michigan - almost twice as many as the national average
 - ◆ 2 ½ times the number of master's degrees were granted in Michigan than the national average
 - ◆ Close to 1,500 Ph.D.s are granted in Michigan every year - almost twice the national average



Courtesy Fanuc Robotics America Inc.

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Michigan Universities: Research Centers

Central Michigan University

- ◆ Center for Computer Vision

Kettering University

- ◆ Rockwell Automation Applied Control Systems Design Laboratory

Lake Superior State University

- ◆ Robotics & Automation Center

Lawrence Technological University

- ◆ World Robofest Center/Competition
- ◆ Computer Engineering/Science Laboratory

Michigan State University

- ◆ Dynamic Systems Laboratory
- ◆ Robotics & Automation Laboratory

Michigan Technological University

- ◆ Intelligent Systems and Control Laboratory
- ◆ Mechatronics and Robotics Laboratory
- ◆ Dynamic Systems and Controls Laboratory

Oakland Community College

- ◆ Customized Robotics & Automation Programs and Certificates

Oakland University

- ◆ Center for Robotics and Advanced Automation

University of Michigan

- ◆ National Science and Technology Center in Ultrafast Optics
- ◆ Center for Lasers & Plasmas for Advanced Manufacturing
- ◆ Wireless Integrated MicroSystems (WIMS) Center

Wayne State University

- ◆ Smart Sensors and Integrated Microsystems Laboratory (SSIM)

Green - These universities are either located in or have campuses in Oakland County

The FIRST Robotics competition (For Inspiration & Recognition of Science & Technology) held annually for high school students continues to inspire careers in robotics and other high-tech fields. As a result, Michigan has the fourth-largest number of high-tech workers in the United States.

Access to Capital

Oakland County's Economic Development Team will help your company find potential sources of capital and financing.

Michigan Venture Capital Association - Established by venture capital and private equity investors in the state, the Michigan Venture Capital Association (MVCA) is the state's premier public policy advocate for the private equity/venture capital industry. MVCA works to promote entrepreneurship and private equity investment.

Venture Capital - In four years alone, over \$694 million in venture capital has been invested in over 100 businesses in Michigan. For new emerging technology initiatives, the state has created the \$150 million Venture Michigan Fund to catalyze investment in early-stage firms operating here. With the matching requirement, this initiative will attract an additional \$450 million in capital to Michigan for investment in promising new companies.

Angel Networks - Aimed at helping companies with early stage seed financing, Michigan is fortunate to have three active Angel Networks: The Great Lakes Angels, The Grand Angels and The Ann Arbor Angels.

Traditional and Non - Traditional Financing - Oakland County's Business Finance Corporation and Economic Development Corporation help companies with the SBA 504 Loan and with Tax-Exempt Revenue Bond programs. Through the Automation Alley Technology Center, emerging companies can be assisted with securing non-traditional and unique sources of financing and capital.

State Incentives / Tax Credits - Michigan has a wide variety of incentive programs and tax credits for companies that qualify.



Courtesy Fanuc Robotics America Inc.



Research Projects at Michigan Universities:

- ◆ Legged robotics
- ◆ Computational neuromechanics
- ◆ Autonomous vision serving clocks and mechanisms
- ◆ Brain machine interface
- ◆ Machine learning
- ◆ Rehabilitative robotics
- ◆ Distributed manipulation (robots)
- ◆ Cobotics (co-operative robotics)
- ◆ Passive dynamic walking, biped robotics
- ◆ Neuromechanics and exoskeleton robotics
- ◆ BioRobotics
- ◆ Flexible robotics and industrial robotics
- ◆ Reconfigurable robotics and automated manufacturing
- ◆ Structural controls and wireless monitoring systems
- ◆ Aircraft and spacecraft controls, attitude dynamics and controls
- ◆ Formation flight (distributed navigation) control
- ◆ Multi-agent coordination and intelligent real-time systems
- ◆ Digital manufacturing
- ◆ Radio frequency identification (RFID)
- ◆ Robotic arm doing breast exams
- ◆ Systems integration / automation
- ◆ Robotic guide dogs for visually impaired shoppers
- ◆ Humanoid robots
- ◆ Fuel cell-powered robots
- ◆ New robotic applications
- ◆ RFID to control mad cow disease
- ◆ Supply chain logistics/ management
- ◆ Automatic free-flying vehicles for inspection and viewing missions
- ◆ Advanced robotic devices that make medical procedures less invasive
- ◆ Manufacturers accessing data from the plant floor via the web
- ◆ Intelligent data acquisition devices
- ◆ Thermal imaging systems
- ◆ Improved night vision technology
- ◆ Robotic virtual surgery
- ◆ Robotic mine clearing system for the U.S. Army
- ◆ Unmanned robotic ground vehicles
- ◆ Robotic rapid quench technology for drug screening

Robotics & Automation Companies

Sixty-eight percent of the state's robotics companies are in Oakland County

ABB

Accubilt Inc.

Acord Inc.

ADD

Advanced Robotics, Inc.

Aggressive Systems Inc.

Air Way Automation Inc.

ALBAH Manufacturing Technologies Corp.

Altron Automation Inc.

Anca Total Precision

Ann Arbor Technologies Corp.

Applied Dynamics International

Applied Manufacturing Technology

Argent Group

Auteb USA

Autoliv Asp Inc.

Automated Process Equipment Corp.

Automated Production Systems

Automated Systems Inc.

Automatic Inspection Systems

Automation & Modular Components Inc.

Behr Systems Inc.

Ben-Tech Industrial Automation

Best Products Inc.

Big Dutchman Inc.

Bosch Rexroth

Braintech Inc.

Burton Industries Inc.

Central Conveyor Co.

Cinetic Automation Corp.

Comau Pico

Complete Auto-Mation Inc.

Corrsys-Datron Sensorsystems

CPI Products Inc.

Creative Automation Inc.

Custom Manufacturing Co.

Dana Corp.

Debron Industrial Electronics Inc.

Dedoes Industries Inc.

Delmia

Denso International America

De-Sta-Co

Detroit Precision Hommel Inc.

Diamond Automations Inc.

DMI Tech Inc.

Robotics & Automation Companies

Dominion Technologies Group
Dumas Central Industries
Dunkley International Inc.
Durr Automation Inc.
Dynalog Inc.
Dynics Inc.
Egemin Automation Inc.
Electro-Matic Products USA
Epic Equipment & Engineering
Ergomatic Systems Inc.
Erie Automation Company
Esys Robotics
F E C Inc.
Fame Industries Inc.
Fanuc Robotics America Inc.
Fata Automation Inc.
Federal APD Inc.
Flexible Automation Inc.
Flow International Corporation
Fori Automation Inc.
Frost Industries
Futuramic Tool & Engineering Co.
General Signal Corp.
Giffin Inc.
Global Electronics Ltd.
Gonzalez Production Systems
Graminex
Gse Tech Motive Tool Inc.
Gudel Inc.
H E L P Engineering Inc.
Haden Inc.
Heidel North America Inc.
Herkules Equipment Corp.
Hi-Tech/F P A
Hms Products Co.
INCAT
Incoe Corp.
Indocomp Systems Inc.
InfoTronics
Ingersoll-Rand
Integral Vision Inc.
Integrated Security Corp.
Intellisys Automotive Systems
Invo Spline Inc.
Iwka Holding Corp.
J H P Inc.
J R Automation Technologies
J.W. Holdings Inc.
JADI Inc.
Jay Enn Corp.
JEM Design Inc.

Jervis B. Webb Co.
Jessup Engineering Inc.
JMR Holdings Inc.
Johann A. Krause Inc.
Kawasaki Robotics
KDS Controls Inc.
KEBA Automation
KMT Robotic Solutions
Koshy Specialty Products
Kratzer Automation
Kuka Flexible Production Systems Corp.
Kuntz Logic Systems
Lapeer Industries Inc.
Lebow Products Inc.
Lematic Inc.
LEONI Engineering Products
Liberty Tool & Engineering Corp.
Lilley Assoc Inc.
Lomar Machine & Tool Co.
Mag Industrial Automation Systems
Magnetic Products Inc.
Mahle, Inc.
Maxitrol Co. Inc.
Methods Machine Tools Inc.
Metro Technologies, Ltd.
Michigan Rebuild & Automation Inc.
Michigan Scientific Corp.
Micro-Machine Co.
Midwestern Processes Inc.
Mika Systems Inc.
Modernization & Development Engineering
Morrell Inc.
Motoman
Multi-Contact U S A Inc.
Nachi Robotic Systems Inc.
Nagase America Corp.
National Element Inc.
NCC Electronics
Outbound Technologies Inc.
Oxford Automotive Inc.
Patriot Sensors & Controls Corp.
Peaker Services inc.
Pilz Automation Safety
Plymouth Wayne/Advanced Robotic Concepts
Precise Finishing Systems Inc.
Precision Devices Inc.
Premier Industries Corp.

Prince Manufacturing Corp.
Progressive Technologies Inc.
Prospects Corp.
Pursuit Technology
Questech Inc.
R W C Inc.
Rebotics International
Renzur Machine Inc.
Resolution Technologies
Rkt Control Support Inc.
RLE International
RoboHand/De-Sta/Co Industries
Robot Fabricators
Robotic Concepts Inc.
Sanyo Machine America Corp.
Self-Guided Systems
SI Systems Inc.
Spectrum Automation Co.
Speedring Systems Inc.
Spem-Tech Machine Engineering
SSI Technology Inc.
Stargate Automation
Static Controls Corp.
Staubli Corp.
Sterling-Detroit Co.
Strategic Alliance Inc.
T A Systems Inc.
Tarpon Automation & Design Co.
TDS Automotive U.S. Inc.
Thoreson-McCosh Inc.
TKS Industrial Co.
Traffic & Safety Control Systems
Tyden Group Inc.
United Industrial Engineering Corp.
Universal Flow Monitors Inc.
USM Systems
Utica International Inc.
Valentine Robotics
VIA Automation
Visual Strategies
VSI Automation Assembly Inc.
Weldmation Inc.
Williams International
Worldwide Synergies
Xycom Automation
Zitek Corp.

Green - Oakland County companies

Blue - Southeast Michigan companies

Black - Michigan companies

Contact us with any additions or changes to this list.

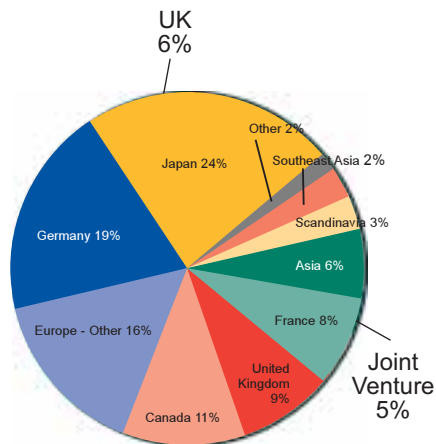
Oakland County Can Help Your Business

The Economic Development Team offers assistance in:

- ◆ Site location
- ◆ Financing
- ◆ Tax Incentives
- ◆ Liaison with state and local agencies
- ◆ Workforce development
- ◆ Business Assistance Center (business consulting)
- ◆ Information products - to ensure you make the right decision for your company's location

Oakland County is an International Hub

Foreign firms make the strategic decision to locate in Oakland County because of the highly skilled workforce, strong educational systems and the international support services available to them.



- ◆ 653 foreign-owned firms from 24 countries are in Oakland County
- ◆ 259 of these firms came to Oakland County in the last 12 years-that's an average of two foreign companies a month opening up a location in Oakland County



L. Brooks Patterson,
Oakland County Executive

*With the support of
The Oakland County Board
of Commissioners*

Oakland County is Strategically Located



- ◆ Centrally located between Chicago, Toronto and Cleveland, Oakland County is strategically positioned to capture the entire Midwest market
- ◆ The Michigan-Ontario border is the busiest U.S.-Canada crossing in the country, making this area an ideal location to reach the United States and the Canadian markets. Ontario, less than an hour's drive from Oakland County, generates some 40% of Canada's total gross domestic product



Contact us today for more information:

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