



Automotive R&D

Driving Your Future



Oakland County/Michigan Information

- ◆ Over 70% of Southeast Michigan's top OEM suppliers are headquartered in Oakland County
- ◆ More than one third of the state's research and development (R&D) facilities are located in Oakland County
- ◆ 47% of *Fortune* 500 companies have a business location in Oakland County
- ◆ Michigan ranks second in the nation in R&D spending
- ◆ Michigan companies file over 3,000 patents a year placing Michigan in the top 10 states for total patents granted
- ◆ Automotive R&D is a \$10 billion a year industry and employs over 60,000 professionals in Southeast Michigan
- ◆ Michigan is No.1 in the world for automotive R&D
- ◆ More than \$18 billion is invested annually in R&D activities, 85% of the NA Auto R&D
- ◆ Fourth largest high-tech workforce in the United States

Workforce: Educated, Innovative & Motivated

- ◆ 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
- ◆ Over 40% of Oakland County residents have college degrees (national average is about 26%)
- ◆ Population of Michigan's workforce: 5.1 million
- ◆ 15 public universities, 50+ independent universities and colleges, 29 community colleges
- ◆ 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 issued in Michigan than the national average
 - ◆ Close to 1,500 Ph.D.s are granted in Michigan every year - almost twice the national average
- ◆ A total of 29,700 people working in automotive industry in Oakland County

Organizations To Support You:

- ◆ Automation Alley - Southeast Michigan's Regional Technology Cluster
- ◆ Center for Automotive Research (CAR)
- ◆ Michigan Manufacturers Association
- ◆ MMTC - Michigan Manufacturing Technology Center
- ◆ National Automotive Center (NAC)
- ◆ National Institute of Industrial Technology (NAIT)
- ◆ Original Equipment Suppliers Association (OESA)
- ◆ Society of Automotive Engineers (SAE)
- ◆ Society of Manufacturing Engineers (SME)
- ◆ U.S. Army Tank-Automotive Research, Development and Engineering Center (TARDEC)
- ◆ U.S. Tank and Armaments Command (TACOM)



Courtesy Denso International America



Courtesy Brose North America

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Michigan Universities: Research Centers

Central Michigan University

- ◆ Center for Supply Chain Management

Eastern Michigan University

- ◆ NSF I/UCRC Center in Coatings Research

Kettering University

- ◆ The Crash Safety Laboratory

Lawrence Technological University

- ◆ Center for Innovative Materials Research

Michigan State University

- ◆ Fraunhofer Center for Coatings and Laser Applications

Michigan Technological University

- ◆ Keweenaw Research Center
- ◆ Sustainable Future Institute

Oakland Community College

- ◆ Customized Automotive Design Programs

Oakland University

- ◆ Fastening & Joining Research Institute
- ◆ Product Development & Manufacturing Center

University of Michigan

- ◆ Automotive Research Center
- ◆ Transportation Research Institute
- ◆ Institute for Advanced Vehicle Systems (IAVS)

Wayne State University

- ◆ Center for Automotive Research
- ◆ Institute for Manufacturing Research
- ◆ HC Emissions in Gasoline Engines Laboratory

Western Michigan University

- ◆ Center for Integrated Design (CID)
- ◆ Automotive Systems Laboratory

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

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, including the \$2 billion Michigan 21st Century Jobs Fund.



Courtesy DaimlerChrysler North America



Research Projects at Michigan Universities:

- ◆ Knowledge Base Engineering (KBE)
- ◆ Validation of advanced high power density diesel systems
- ◆ Solar car experiment
- ◆ Engine charging and filtration systems
- ◆ Mechanical fastening and adhesive bonding of composite and polymer joints
- ◆ Optimization of new energy conversion systems
- ◆ Next generation telematics
- ◆ Hybrid propulsion system components and integration
- ◆ Finite element modeling and analysis of composite, polymer and metallic joints
- ◆ Composite drive shafts
- ◆ Carbon Fiber Reinforced Polymer (CFRP) materials
- ◆ Fuel cell APU modeling and integration within vehicle system simulation
- ◆ Carbon-based coatings
- ◆ Virtual engineering
- ◆ Mechanical properties of polymers and elastomers
- ◆ Advanced corrosion resistant zinc alloys
- ◆ Decreasing emissions research and applications
- ◆ Distributed processing systems with an emphasis on automotive applications
- ◆ Simulation-based automotive design
- ◆ Advanced and hybrid powertrains
- ◆ Engine thermal modeling
- ◆ Vehicle systems integration
- ◆ Safety enhancement systems
- ◆ Vibration transmission in complex vehicle structures
- ◆ Innovative body designs for unmanned and alternative vehicles
- ◆ Shoulder biomechanics for vehicle interior design
- ◆ Military hybrid electric vehicle performance modeling and optimization
- ◆ Robust optimal design of vehicle components
- ◆ Clean automotive technology
- ◆ Microsystems integration in transportation vehicles
- ◆ Fuel cell storage systems for automotive applications

Automotive R&D Companies

Oakland County is considered the brains of the automotive industry in Michigan. With a technically-skilled and globally-trained workforce, it's no wonder automotive R&D companies want to be located in Oakland County - the state's leading county for business development projects. Oakland County is where global automotive companies locate because this is where their customers are and where their future success lies. Some of the leading automotive R&D companies are:

3d Polymers Inc.

A.D.W. Industries Inc.

Accurate Automotive Engines Inc.

Ace Controls Inc.

Acme Mills Co.

ACT Laboratories

Adac Plastics Inc.

Advance Manufacturing, Engineering & Design

Advanced Auto Trends Inc.

Affinia Group Inc.

Aisin

Akebono Corporation North America

Alcan Automotive

Alpha Technology Corp.

Alphi Manufacturing Inc.

Alpine Plastics Inc.

Alps Automotive

Amco Manufacturing Co.

American Axle & Manufacturing

American Team Inc.

Amerigon Inc.

Amsea Inc.

Android Industries

ArvinMeritor

Asama Coldwater Manufacturing

ASC Inc.

Asimco Camshaft Specialties Inc.

Atlantic Automotive Components

Audi North America

Auto Chassis International

Auto/Con Corp.

Autocam Corp.

Autoform Inc.

Autolign Manufacturing Group Inc.

Autoliv

Automotive Corp.

Avon Plastic Products Inc.

AW Transmission Engineering

Axle Alliance Co.

Axletech International Inc.
Aztec Manufacturing Corp.
B & K Corp.
Baldwin Precision Inc.
Ballantrae Corp.
Barker Manufacturing Co.
BASF
BBI Enterprises
Beaumont's National Surgical Learning Center
Behr America Inc.
Benteler Automotive Corp.
Best Products Inc.
Black River Manufacturing Inc.
BLD Products
BorgWarner Inc.
BOS Automotive Products Inc.
Bosal Industries Inc.
Bosch Automotive
Brose North America
Budd Co Technical Center
Burr Engineering & Development Co.
Burtek Inc.
Bytec Inc.
C C Industries
Cadillac Products Inc.
Cadence Innovation
Caltherm Corp.
Camaco LLC
Camshaft Machine Co.
Cequent Electrical Products
Cipa USA Inc.

CME Mitsuba Corp.
Collins & Aikman Global Product Development Division
Comau Pico
Complete Auto-Mation Inc.
Complete Prototype Service Inc.
Cone Drive Operations Inc.
Consolidated Industrial Corp.
Continental Structural Plastics Inc.
Continental Teves Inc.
Controlled Power Co.
Cosma International
Coupled Products Inc.
Crotty Corp.
Cyltec
D T I Molded Products Inc.
Daikin Clutch Corp.
DaimlerChrysler North America
Dakota Integrated Systems
DANA Corp.
Dart Machinery
Dassault Systems
Davco Technology
Debron Industrial Electronics Inc.
Decoma International
Delphi
Delta Product Engineering Co.
Delta Research Corp.
Denso International America
Detroit Chassis
Detroit Diesel Corp.
Detroit Technologies Inc.
Dolphin Manufacturing Inc.
Douglas Autotech Corp.
Dow Automotive
Dow Corning
Duaalex Inc.
DuPont Automotive
Dura Automotive Systems Inc.
Durr Industries
Dynamic Corp.
E & E Manufacturing Co.
Eagle Industries Inc.
Eagle Ottawa
EaglePicher Automotive Inc.
Eaton Corp.
Eberspaecher Incorporated North America

Elite Plastic Products Inc.
Emitec USA
Engine Power Components Inc.
Engineered Machined Products
Engineered Plastic Components
Engineered Plastic Products Inc.
Engineering Service Inc.
Engineering Tube Specialties
E-T-M Enterprises Inc.
Euclid Industries Inc.
Excellence Manufacturing Inc.
Extang Corp.
Fabtronic Inc.
FANUC Robotics North America
Fasco DC Motors
FCI Automotive
Federal-Mogul Corp.
FEV Engine Technology Inc.
Fiamm Technologies Inc.
Fischer America Inc.
Fleet Engineers Inc.
Flexible Products Co.
Ford Motor Co.
Freudenberg-Nok General Partnership
FTE Automotive USA Inc.
Gage Pattern & Model Inc.
Galaxy Industries Corp.
Gateplex Molded Products Inc.
Gates Automotive Technical Center
GDH Automotive Inc.
General Engine Products
General Filters Inc.
General Motors Corp.
Gentex Corp.
GHSP Inc.
GKN Driveline North America Inc.
GKN Sinter Metals Inc.
Glassmaster Controls Company Inc.
Global Automotive
Gonzalez Design Engineering
Grand Industries Inc.
Great Lakes Industry Inc.
Greening Testing Laboratories
Grupo Antolin Michigan Inc.
Guardian Automotive Technical Center



Courtesy DaimlerChrysler North America

Automotive R&D Companies *continued*

H & L Manufacturing Co .
Hadley Products Corp.
Hayes Lemmerz International-
Technical Center
Hella Electronics Corp.
Hi-Lex Automotive Center
Hitachi Automotive
HLI Commercial Highway Co.
Holland USA Inc.
Huntsman Polyurethanes
Hut North America
Husky Injection Molding Systems
Hutchinson FTS
Hyundai Kia R&D Center
IEM Plastics Inc.
Inalfa Roof Systems Inc.
Inergy Automotive Systems
Intermet Corporation
International Catalyst Technology
Inc.
International Engineering &
Manufacturing Inc.
Intertec Systems
Intier Automotive Interiors
Ironwood Plastics Inc.
Iverson Industries Inc.
J L International Inc.
Jacobs Industries Inc.
Jay Enn Corp.
JL Automotive
Johnson Controls Interiors
Johnson Matthey Testing
Jost International Corp.
K P Sogoian Manufacturing Inc.
Kaiser Aluminum
Karmann USA
Kautex Inc.
Kellogg Crankshaft Co.
Kelsey-Hayes Co.
Key Acco
Key Automotive Accessories Inc.
Keykert USA
K-Line Industries Inc.
Knusaga Corp.
Kolbenschmidt Pierburg
Kongsberg Automotive Inc.
Koyo North American Engineering
& Technical Center
L T C Roll & Engineering Co.
LDM Technologies Inc.
Lear Technical Division
Leon Plastics Inc.
Letts Industries Inc
Ligon Brothers Manufacturing Co.
Loctite Automotive Technology
Center
Logghe Stamping Co.
Long USA
Lopez Industries Inc.
Lorro Inc.
Lotus Engineering
M & S Manufacturing Co.
Machine Tool & Gear Inc.
Mack Industries Inc.
Magna Powertrain Inc.
Magnesium Products of America
Magnum Corp.
Mahle Technology Inc.
Majestic Model and Pattern Inc.
Mann+Hummel USA
Mariah Industries Inc.
Marley Precision Inc.
Martinrea Industries Inc.
Master Manufacturing Inc.
Maxable Inc.
McKechnie Vehicle Components
Means Industries Inc.
Mechanical Simulation
Medallion Instrumentation Systems
Melling Products Corp.
Meritor Light Vehicles Inc.
Metaldyne Corp.
Miba Hydramechanica Corp.
Michigan 99 Inc.
Michigan Automotive Compressor
Michigan Gage Specialties Inc.
Michigan Precision Swiss Parts
Company Inc.
Michigan Production Machining Inc.
Michigan Rubber Products
Micro Craft Inc.
MicroHeat
Miller Industrial Products Inc.
Mirror-Lite Company Inc.
Mistequay Group
MNP Corp.
Monroe Inc.
Musashi Auto Parts Michigan Inc.
National Steel Technical Research
Center
New Center Stamping Inc.
Newcor Inc.
Nippon Antennae
Nissan Design Center
Nissan Technical Center North
America
Nisshinbo Automotive Corp.
Nitrex Metal Inc.
Noble International
Norma Products USA
Northern Tube Inc.
Novatron Corp.
Novi Industries Inc.
NSK Corp.
Nu Con Corp.
Nuestro
NYX Inc.
Oakley Industries
Off Site Manufacturing
Technologies Inc.
Ogura Corp.
OMG
Outokumpu Livernois Engineering
Co.
Owens Corning Automotive
Owens Products Inc.
Oxford Automotive Inc.
P T L Engineering Inc.
P.T.M. Corp.
Pacific Automotive Components &
Systems International
Paragon Laboratories
Perceptron
Performance Assembly Solutions
Pilot Industries
Piston Automotive
Plastic Omnium Auto Exteriors
Plastic Plate Inc.
Pollone S.A. Industria E Comercia
POM Group
Pontiac Coil Inc.
Premier Products Inc.
Pridgeon & Clay Inc.
Prodrive-Engelhard
Production Engineering Inc.
Production Technologies



Courtesy DaimlerChrysler North America

[Profile Manufacturing Inc.](#)
[Prospects Corp.](#)
[Pyper Products Corp.](#)
[QMP America](#)
[QP Inc.](#)
[QQC](#)
[Qualitor Inc.](#)
[Quality Plus Inc.](#)
[Quality Steel Products Inc.](#)
[R J S Racing Equipment Inc.](#)
[Rapp & Sons Inc.](#)
[Rassey Industries Inc.](#)
[Raybestos Automotive Components](#)
[RCO Engineering Inc.](#)
[Regency Plastics - Ubyl Inc.](#)
[Renosol Seating](#)
[Re-Sol, LLC](#)
[Ricardo](#)
[Rieter Automotive North America](#)
[Robert Bosch](#)
[Rochester Gear Inc.](#)
[Romeo-Rim Inc.](#)

[Roush Industries Inc.](#)
[Rubber Enterprises Inc.](#)
[S & R Automotive Manufacturers Corp.](#)
[ZF Sachs](#)
[Saginaw Machine Systems](#)
[Saturn Electronics & Engineering](#)
[Schaeffler Group](#)
[Schwab Industries Inc.](#)
[Selkey Manufacturing Co.](#)
[Sharp Model Company Inc.](#)
[Siemens VDO Automotive Corp.](#)
[Skilled Manufacturing Inc.](#)
[Solvay Engineered Polymers](#)
[Spartan Motors Inc.](#)
[Specialty Engine Components](#)
[Sportrack](#)
[Stabilus](#)
[Sterling Performance](#)
[STM Power](#)
[Subaru Research & Development](#)
[Su-Dan Industries Inc.](#)
[Superior Plastic Inc.](#)
[Symtec Manufacturing Technologies](#)
[Synchronous Manufacturing Inc.](#)
[System Components Inc.](#)
[Systrand Manufacturing Corp.](#)
[Takata](#)
[TAC Manufacturing Inc.](#)
[Tawas Industries Inc.](#)
[Tech-Metal Corp.](#)
[Tecumseh Products Co.](#)
[Teksid Inc.](#)
[Teleflex Automotive Manufacturing Corp.](#)
[Textron Automotive Functional Components Inc.](#)
[The Bing Group](#)
[The Budd Co.](#)
[ThyssenKrupp USA Inc.](#)
[TI Group Automotive Systems](#)
[TK Holdings](#)
[Torca Products Inc.](#)
[Torsion Control Products Inc.](#)
[Tower Automotive Products Company Inc.](#)

[Toyo Seat USA Corp.](#)
[Toyota Technical Center](#)
[Track Corp.](#)
[Tractech Inc.](#)
[Tram Inc.](#)
[Transform Automotive](#)
[Transmission Technologies Corp.](#)
[Transpec Inc.](#)
[Tribar Manufacturing](#)
[Trico Products Corp.](#)
[Trident Lighting](#)
[Triflex Industries Inc.](#)
[Trimas Corp.](#)
[Trimquest](#)
[TRMI Inc.](#)
[Truck Trailer Transit Inc.](#)
[Tru-Val Tubing Co.](#)
[TRW Automotive Inc.](#)
[Twin Corp.](#)
[U. S. Farathane Corp.](#)
[U. S. Industrial Tech](#)
[U. S. Manufacturing Corp.](#)
[U. S. Steel Automotive Center](#)
[Umicore Autocat Inc.](#)
[Uni Texga USA Inc.](#)
[Uni-Bond Brake Inc.](#)
[Unifilter Inc.](#)
[United Machining Inc.](#)
[Valeo Inc.](#)
[Van Products Co.](#)
[Vehma International of America](#)
[Ventech Automotive](#)
[Visteon Corp.](#)
[Vitec](#)
[Volkswagon North America](#)
[Vulcan Industries Inc.](#)
[Walbro Engine Management](#)
[Wall Colmonoy Corp.](#)
[Warren Screw Products Inc.](#)
[Wayne Manufacturing Inc.](#)
[Webasto Roof Systems Inc.](#)
[Wellington Industries Inc.](#)
[Willis Automotive Group Inc.](#)
[ZF Group North America](#)

Green - Oakland County companies
 Blue - Southeast Michigan companies
 Black - Michigan companies
 Contact us with any additions or changes to this list.

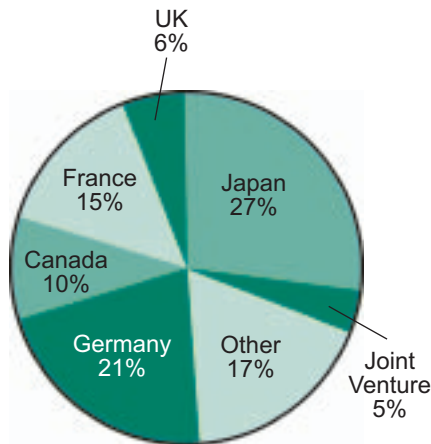
Oakland County Can Help Your Business

Our Economic Development Team offers free and confidential 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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