

# the future of Ohio jobs



## Ohio companies using Supercomputing

Many well-known companies with ties to Ohio employ supercomputing to increase their industrial productivity. Supercomputing allows these companies to compete in the global marketplace by reducing costs and time-to-market, while increasing the quality of product and service development. The following are a few of those industries that already use supercomputing:

### **Procter & Gamble**

(Cincinnati)

Redesign Pringles potato crisps so they don't flutter off moving conveyor belts during production

### **Ford Motor Company**

(Avon, Cleveland, Lima, Maumee, Batavia, Sharonville)

Predict noise, vibration and harshness (NVH) performance of powertrain assemblies

### **Whirlpool**

(Clyde, Marion)

Design packaging that saves millions annually on shipping damage and product returns

### **Medical Device Solutions**

(Cleveland)

Perform complex computational modeling to create new medical devices

### **The Kroger Company**

(Cincinnati)

Use biometric finger scanning technology to pilot retail point-of-sale transactions

### **Goodyear Tire & Rubber Co.**

(Akron)

Reduce the cost of physical tire prototypes from 40 percent to 15 percent

### **General Motors**

(Cincinnati, Columbus, Defiance, Lordstown, Toledo, Moraine, Parma, Mansfield)

Search for ways to convert a vehicle's waste heat into usable electricity

### **GE Aviation**

(Evendale, Cincinnati, Peebles, Dayton)

Model complex turbomachinery to create better, faster, more fuel-efficient jet engines

### **J.P. Morgan Chase & Co.**

(Columbus)

Use grid computing to develop mathematical models for pricing, hedging and risk measurement of derivative securities

### **Timken**

(Canton)

Develop improved NASCAR suspension system components and steering system geometries

### **Military Researchers**

(Wright-Patterson AFB, NASA Glenn Research Center)

Design energy-absorbing seats for armored vehicles to protect soldiers' ability to survive a mine blast

Simulate how chemicals bind to amino acids to develop more effective chemical warfare agent antidotes

### **Rolls-Royce Energy Systems, Inc.**

(Mount Vernon)

Model the effects of jet engines striking birds in flight and engine behavior following the collisions

### **Ohio CAE Inc.**

(Cincinnati, Hudson)

Develop advanced analysis tools for applications such as elastic artery modeling for stent design

### **Cedar Fair Entertainment Co.**

[parent company of Cedar Point and King's Island] (Sandusky)

Design roller coasters, analyzing structural integrity, biodynamic impacts and aesthetic appeal

### **Nationwide Mutual Insurance Co.**

(Columbus)

Use risk modeling techniques by creating regional climate forecasts to estimate future losses

### **Jo-Ann Fabric & Craft Stores**

(Cleveland)

Evaluate workforce skills, labor pool depth and transportation options for choosing the location of a distribution hub

### **Forensic Bioinformatics DNA Consulting Services**

(Fairborn)

Provide automated analysis and expert review of forensic DNA evidence

### **The Boeing Company**

(Heath)

Design a Delta IV rocket to launch satellites into space