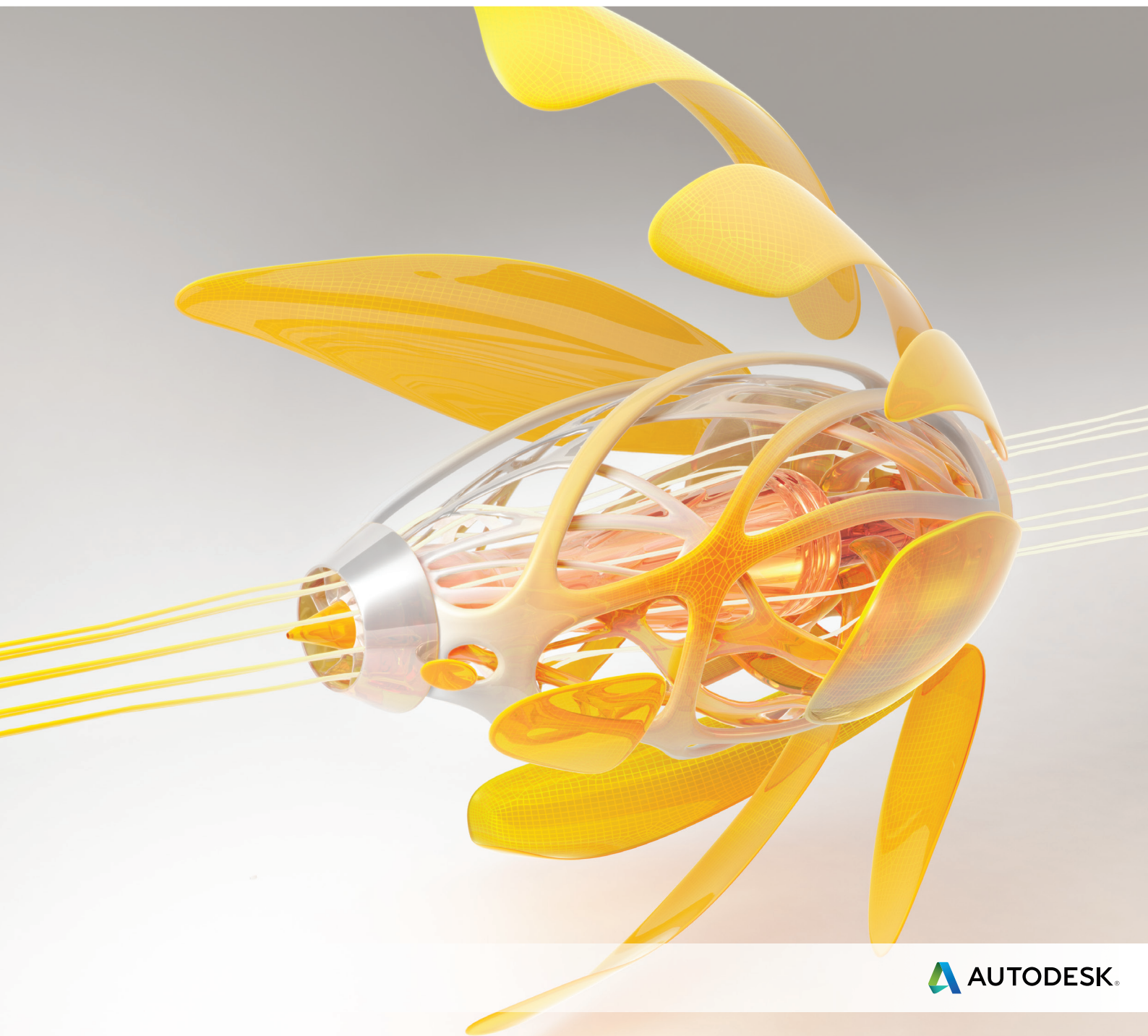AUTODESK® **SIMULATION**

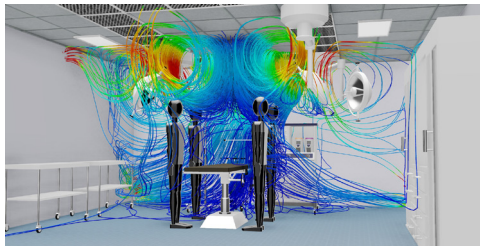# Predict product performance with simulation

AUTODESK®

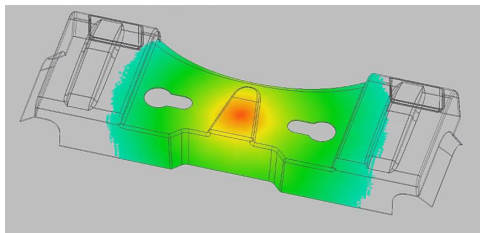# Validate, predict, and optimize your designs with Autodesk Simulation software

Explore your ideas before building with the Autodesk Simulation family of products and the Autodesk Digital Prototyping solution

> Autodesk Simulation was the answer to everything we wanted. When you don't use a product every day, it's important that you can pick it up, go through some simple steps, and be confident you will get the right results.
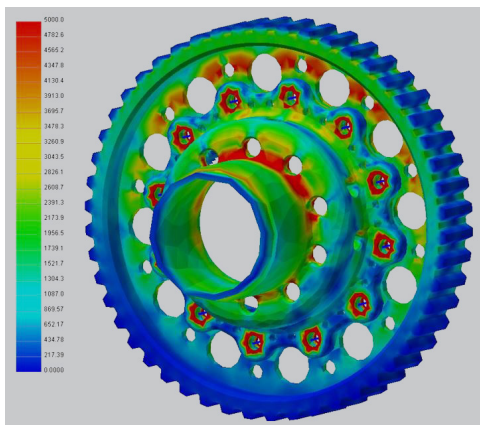>
> —**Tim Gladdy**
>   Design Engineer
>   Norgren Inc.

Autodesk® Simulation CFD

Autodesk® Simulation DFM

Autodesk® Nastran® In-CAD

Deliver better designs faster with Autodesk Simulation software and Digital Prototyping

Predict product performance by optimizing and validating your designs with the Autodesk® Simulation family of products and the Digital Prototyping solution from Autodesk—an intelligent, model-based approach to product development that helps you communicate, explore, refine, and implement new ideas in a compelling yet easy-to-understand way.

With Autodesk Simulation software, you can integrate mechanical, structural, fluid flow, thermal, composite, and plastic injection molding simulation tools into your product development process to help reduce costs and speed time to market. Autodesk provides a range of flexible solutions that enable you to solve locally or in the cloud, to increase your productivity.

Mechanical

Autodesk Simulation Mechanical

Autodesk® Simulation Mechanical software, powered by the Autodesk® Nastran® solver, accurately predicts product performance, optimizes designs, and validates product behavior before manufacturing. Simulation Mechanical brings Finite Element Analysis (FEA) to all designers, engineers, and analysts to help make great products.

Support for multi-CAD environments, extensive finite element modeling tools, and built-in material libraries help manufacturers study products earlier, more often, and in greater detail. Easily exchange data with most CAD software tools, Autodesk® Simulation Moldflow® plastic injection molding simulation tools, and Autodesk® Vault data management software.

Autodesk Nastran In-CAD

Autodesk® Nastran® In-CAD software, a CAD-embedded general purpose finite element analysis tool powered by the Autodesk Nastran solver, offers a wide range of simulation capabilities that span multiple analysis types. It is a part of Autodesk's Digital Prototyping solution—delivering a high-end simulation in a CAD-embedded workflow to help engineers and analysts make great products.

Autodesk Nastran

Autodesk Nastran, an industry-recognized FEA solver, analyzes linear and nonlinear stress, dynamics, and heat transfer characteristics of structures and mechanical components—providing real-time results and changes in solution parameters while solving. This high-end technology helps engineers and analysts gain accurate results to complex simulations and is a part of Autodesk's Digital Prototyping solution.

### Plastics

Autodesk Simulation Moldflow

Autodesk Simulation Moldflow software provides plastic injection molding simulation tools to help CAE analysts, engineers, and designers validate and optimize plastic parts, injection molds, and the injection molding process. With access to over 9,500 grades of commercial plastics and accurate material data, manufacturers can effectively evaluate various material options.

Simulation Moldflow supports direct data exchange with most CAD software tools and Autodesk Simulation Mechanical software for more accurate structural simulations. Companies worldwide use Simulation Moldflow to make great products. By reducing the need for costly physical prototypes, they can avoid potential manufacturing defects and get innovative products to market faster.

Autodesk Simulation DFM

Autodesk® Simulation DFM software works within your existing 3D CAD environment with easy-to-understand indicators that provide near real-time feedback regarding your design's manufacturability, cost, and environmental impact.

Simulation DFM gives you manufacturability feedback early in the design process as you create new CAD geometry. It also scans your 3D CAD geometry, providing feedback on nominal wall thickness, draft angles, material cost, recyclability, sink marks, and more.
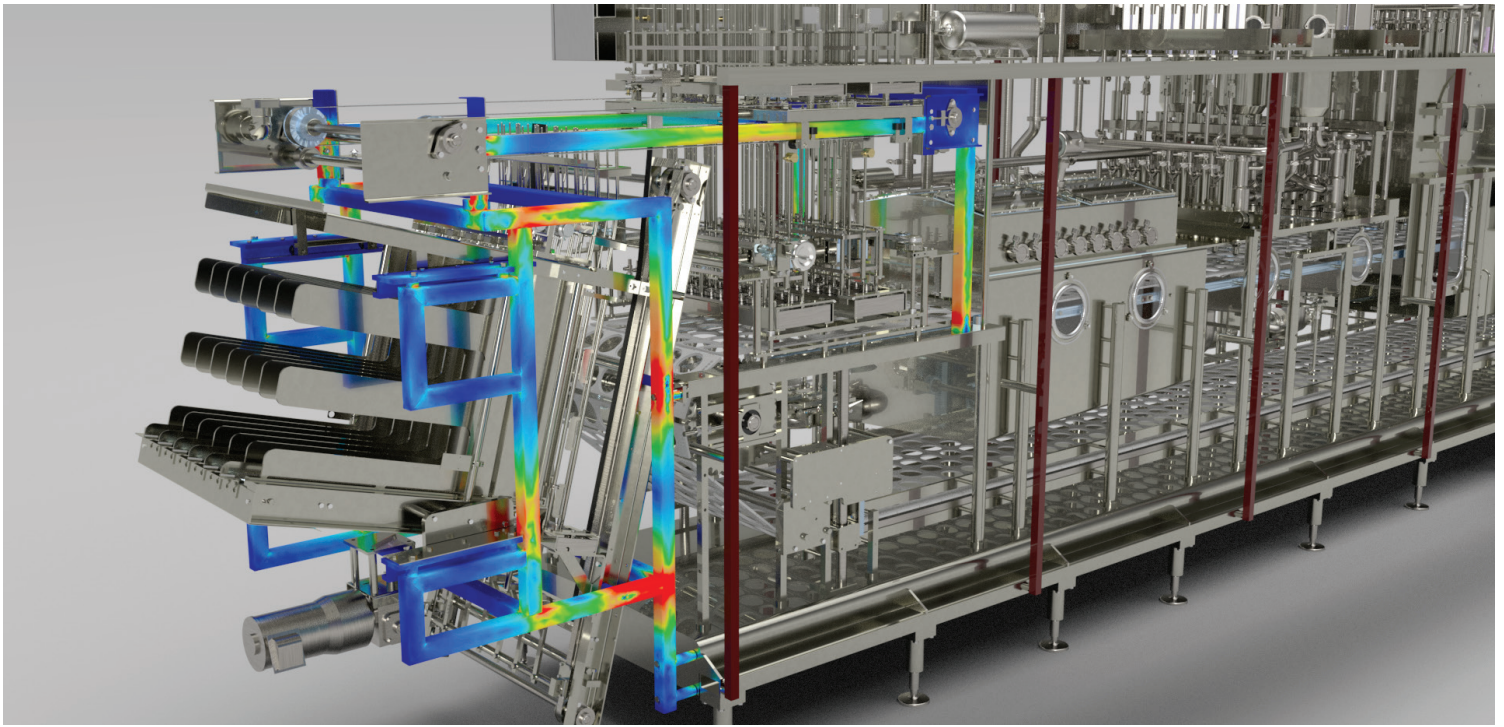
Autodesk® Simulation Mechanical. Image courtesy of Osgood Industries, Inc.

Composites

Autodesk Simulation Composite Analysis

Autodesk® Simulation Composite Analysis software is an add-on for commercial finite element programs and is designed specifically to improve accuracy, efficiency, and convergence for the simulation of composite materials. Simulating failure of composite structures earlier in the design process enables design validation prior to experimental testing, which helps to reduce testing time and cost and helps you make great products.

Autodesk Simulation Composite Design

Autodesk® Simulation Composite Design software helps you better predict the behavior of a composite material, laminate, and simple structure with tools for composite simulation available through an easy-to-use graphical interface. Composite Design is an ideal tool to help engineers and designers understand the performance of advanced composite materials.

Computational Fluid Dynamics

Autodesk Simulation CFD

Autodesk® Simulation CFD software provides flexible fluid flow and thermal simulation tools to help you make decisions earlier in the product development process.

Easily explore and compare design alternatives and better understand the implications of design choices using an innovative Design Study Environment and automation tools. Autodesk Simulation CFD software supports direct data exchange with most CAD software tools and Autodesk® Inventor® software, Autodesk® Revit® software, Pro/ENGINEER®, and SolidWorks®.

Autodesk Flow Design

Autodesk® Flow Design software simulates airflow and wind tunnel testing around buildings, vehicles, outdoor equipment, consumer products, or any other virtual structure. Fast feedback and intuitive controls enable users to gain deep design insight early in the development process.

Structural

Autodesk Robot Structural Analysis Professional

Autodesk® Robot™ Structural Analysis Professional software provides structural engineers with advanced building simulation and structural element analysis capabilities for large, complex structures. The software offers a smooth workflow, enabling engineers to more quickly perform simulation and analysis of a variety of structures.

Make great products with Autodesk Simulation software and Digital Prototyping

Discover what you can do with the Autodesk Simulation family of products by visiting **simulation.autodesk.com.**

For more details on how the Autodesk Digital Prototyping solution can transform your product development process, go to **autodesk.com/digital-prototyping.**
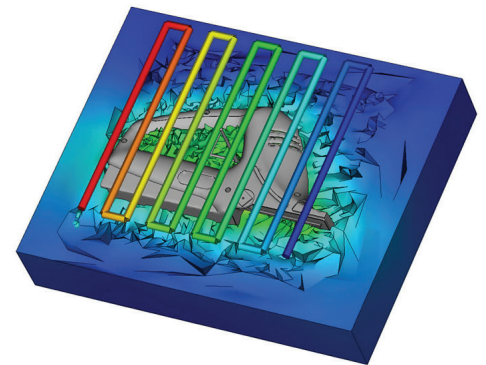
Autodesk® Simulation Moldflow®
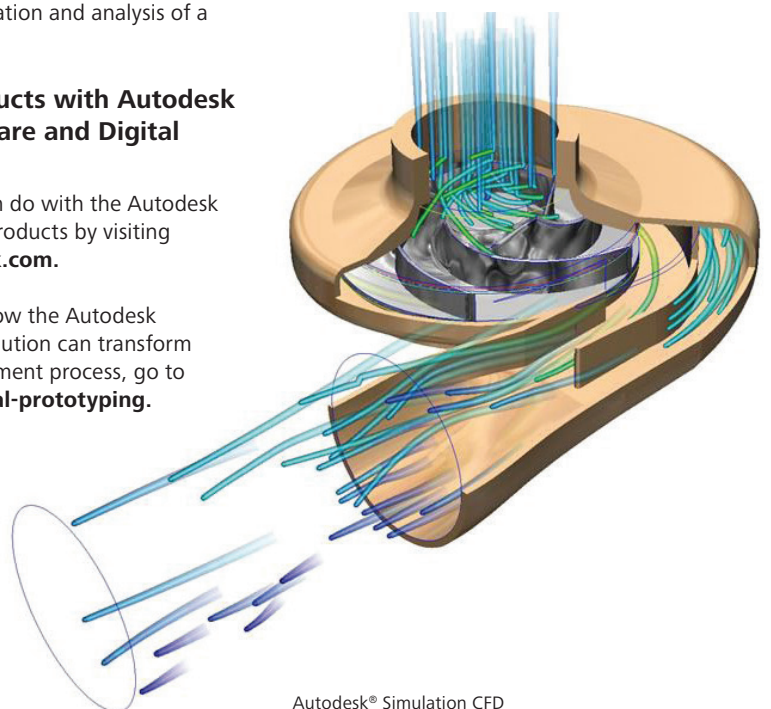
Autodesk® Simulation CFD

Autodesk Digital Prototyping is an innovative way for you to explore your ideas before they're even built. It's a way for team members to collaborate across disciplines. And it's a way for individuals and companies of all sizes to get great products to market faster than ever before. From concept through design, manufacturing, marketing, and beyond, Autodesk Digital Prototyping streamlines the product development process from start to finish.

Learn more or purchase

Access specialists worldwide who can provide product expertise, a deep understanding of your industry, and value that extends beyond your software purchase. To take advantage of Autodesk Digital Prototyping, contact an Autodesk Authorized Reseller near you by visiting **www.autodesk.com/reseller** or learn more at **www.simulation.autodesk.com.**

Autodesk Education

Autodesk offers students and educators a variety of resources to help ensure students are prepared for successful design careers, including access to free* software, curricula, training materials, and other resources. Get expert guidance at an Autodesk Authorized Training Center (ATC®) site, and validate skills with Autodesk Certification. Learn more at **www.autodesk.com/education.**

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Subscribe to Autodesk® Maintenance Subscription for Autodesk® Simulation software. Maintenance Subscription gives you an advantage with upgrades to the latest software releases, flexible licensing rights, powerful cloud services, and technical support.** Learn more at **www.autodesk.com/maintenance-subscription.**

Autodesk 360

The Autodesk® 360 cloud-based framework provides tools and services to extend design beyond the desktop.† Streamline your workflows, effectively collaborate, and quickly access and share your work virtually anytime, from anywhere. Learn more at **www.autodesk.com/autodesk360.**

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