

# THE NAVIGATOR



## Two New RP Technologies

Vista has installed an Eden 500 Polyjet machine. The Polyjet technology is very similar to SLA. The material options are similar along with the build styles. The value of the Eden 500 is its capacity, speed, and surface finish.



The Eden 500 is one of the newest technologies to assist with building "fit and form" prototypes.

The Eden 500 has two build styles, High Speed (HS), which builds parts in .001" layers and High Quality (HQ), which builds parts in .0006" layers. With these two build

platforms, it allows us to capture precise wall surfaces along with crisp details. The Eden 500 is the largest Polyjet platform size with the dimensions of 19.3" x 15.4" x 7.9".

The .0006" is extremely exciting for crisp detailed parts, but it should be explained that the Polyjet technology falls short on building .020" or smaller wall thicknesses. Due to how the material is laid through an inkjet process, the material in the X and Y dimensions cannot capture features under .020". The finer detail of the part may be oriented to run in the Z axis if the part design lends itself.

Along with adding the Polyjet Eden 500, we also added the FDM Titan. The FDM technology allows us to build parts in ABS. These FDM parts are built in extruded layers of ABS to get you a more functional prototype. The FDM technology excels in housings and robust parts, but falls short on thin sections under .020". The platform size is 16" x 14" x 16" and larger parts can be split and bonded back together.



The Titan allows us to build functional prototypes with materials such as ABS.

ABS is the most commonly used FDM material. It is offered in many colors, but black and white are the most popular. Other FDM materials available are Polycarbonate (PC) and Polyphenylsulfone (PPSF). You can find these material spec sheets on our website at [www.vistatek.com](http://www.vistatek.com). The FDM materials are difficult to finish due to the material strength, so in the surface finish you can detect build lines in your prototype parts. You will gain function, but sacrifice surface finish compared to SLA or Polyjet.

SLA • FDM  
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Rapid Prototyping • Rapid Tooling

Rapid Tooling  
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Standard Resins  
Polyjet



## Congrats Jenny!

Jennifer Sutherland, Operations Manager of Vista Technologies, was nominated by the Society of Manufacturing Engineers (SME) for "The New Faces of Engineering".

Jenny graduated in 1999 with a BS degree in Mechanical Engineering at Bradley University in Peoria, Illinois. Jenny has demonstrated exemplary vision, engineering and management to lead Vista Technologies to the forefront of the rapid prototyping/rapid tooling industry.

Her innovations in high-speed milling (speeds, feeds, automated tool path programming, fixturing and specialty designed cutters), have enabled production basis manufacturing of plastic injection molds with very abbreviated lead times. As a result, Vista has realized triple digit growth in mold building – an industry that has recently seen significant competition by Chinese companies.

Sutherland is engaged in advancing rapid prototyping, particularly in the area of testing of new resins for stereolithography. She is also developing a system for online quoting and ordering, while establishing and maintaining Vista's internal networking system.

In her former position at Pentair Corp, Sutherland gained invaluable experience in design, international manufacturing, project management and outsourcing, transferring the entire engineering database of a \$60-million company to Asia and Mexico in less than one year. Additionally, Sutherland developed a new automotive lifting device resulting in a 75 percent cost savings. At Higher Dimension Research, Sutherland took a new puncture/cut resistant material from concept to large-scale, cost effective manufacturing. She also designed and manufactured new product testing equipment.

Finally, as a person who recognizes the importance of contributing to the field of engineering, Sutherland regularly participates in Society of Manufacturing Engineer activities, as well as in youth programs that expose children to science and engineering.

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**SHANE R. BYRD**  
Walt Tyne Assistant, 3M  
Nominated by the American Council of Engineering Companies  
Shane, 26, uses innovative, sensitive processes and 3D to bring product plans to life, including the Grand Staircase, Lake Umbagog, and the U.S. Administration, and the U.S.



**BRUCK DUKE**  
SP President NA Inc.  
Nominated by the American Society of Civil Engineers  
Duke, 26, developed new wastewater treatment technology for manufacturing plants in Malaysia, Taiwan, South Korea, and the U.S.



**JASON BRANDON ADAMS, Ph.D.**  
U.S. Army Engineering and Support Center  
Nominated by the U.S. Army Corps of Engineers  
Adams, 26, conducted a process to reduce the magnitude of chemical warfare weapons incidents and ease of environmental remediation.



**LORA B. WEILAND, E.I.**  
Petersen Structures  
Nominated by the American Society of Civil Engineers  
Weiland, 26, developed a construction safety program now used as a training tool by the West Virginia Division of Highways.



**BRUCE COHEN**  
Nominated by the American Society of Heating, Refrigerating and Air-Conditioning Engineers  
Cohen, 27, develops new systems for museums that require high environmental controls including the Museum of Art in Cleveland and Phoenix.



**TOM MARJOLEE AHUJA**  
Efficiency  
Nominated by ASHRAE  
Ahuja, 26, leads the globe from the new business to provide sustainable energy systems among students, professional professionals, and fellow engineers.



**YASHVIR D. PATEL, Ph.D.**  
THALES Corp.  
Nominated by the Chinese Institute of Engineers - CIE  
Patel, 26, designs innovative aircraft power systems and was key in developing the aircraft's integrated Computer System for the US Navy's F-35 Joint Strike Fighter.



**VANESSA RODRIGUEZ**  
General Dynamics Advanced Information Systems  
Nominated by IEEE  
Rodriguez, 26, is a member of the student engineering and research organization at developing the Integrated Computer System for the U.S. Army's Future Combat Systems.



**MARCO A. DUARTE**  
Chief of Mission Section, Superintendencia Aeronautica  
Nominated by the Institute of Aeronautical Engineers  
Duarte, 26, focuses on homeland security by providing efficiency of the response aircraft system at the Houston Airport.



**ALAN CHARLES EVERETT BARBER, Ph.D.**  
PDU TEXAS  
Nominated by the U.S. Navy Nuclear Propulsion Program  
Barber, 26, leads his through knowledge of reactor plant engineering during construction of the Navy's newest attack submarine, the USS TEXAS.



**JENNIFER L. WILCOX, Ph.D.**  
Nanospace Technologies Institute  
Nominated by the National Science Foundation  
Wilcox, 26, focuses on research in nanoscale materials to create energy production or fuel-cell grids, with environmental benefits.



**TIMOTHY D. SWITZER, E.I.**  
Baker Engineering, Inc.  
Nominated by the American Society of Professional Engineers  
Switzer, 27, develops new control systems for Boeing 747-400, including changes of the Main Deck at United States Airways, and develops control systems.



**SAKANA K. HERNANDEZ**  
Tara Tech SMP  
Nominated by the Society of Hispanic Professional Engineers  
Hernandez, 26, developed flexible zones for the 9/11 attacks in London, Florida, a general regional fly-to-the-Bay.



**JENNIFER SUTHERLAND**  
Vista Technologies, LLC  
Nominated by the Society of Manufacturing Engineers  
Sutherland, 26, is engaged in rapid prototyping, testing and high-speed milling, with industry innovation leading to high-tech manufacturing growth.



**J. HOLLANDER, Ph.D.**  
Energy Research Services, Inc.  
Nominated by the Society of Professional Engineers  
Hollander, 26, is a member of the IEEE and has been named one of the top 100 students to recognize energy delivery.



**RESHA SPINAL**  
Nominated by the Society of Professional Engineers  
Spinal, 27, develops precision software models of multi-generation processes and works with university students to teach "soft" problem-solving and people skills.

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