

3D PRINTER CASE STUDY

Functional 3D Medical Models From CT Scans



Seattle Children's Hospital is one of the top five pediatric research centers in the nation. Organized in areas central to infant health, they seek new cures for diseases and conditions that impact children globally. Specifically, bioengineers are researching conditions such as respiratory and perinatal infections using the V-Flash® Desktop 3D Printer from 3D Systems in their pioneering work.

“With V-Flash® we have been the first to create accurate 3D models of an infant nasal and oral passage. People have been ecstatic to see the possibilities of affordable rapid prototyping in medicine”

Jay Zignego
Bioengineer
Center for Developmental Therapeutics
Seattle Children's, WA



Some of the challenges these bioengineers face includes the ability to model complex organic shapes such as the chest wall, spine and nasal pharynx. “Accurately modeling the premature infant nasal pharynx has been a difficult task,” said Jay Zignego, Bioengineer at the Center for Developmental Therapeutics. Yet, having these models readily available is essential to our ability to test respiratory device interfaces.”

After some investigation the team discovered the V-Flash® Desktop 3D Printer from 3D Systems and sold through a reseller, HS&S Machine Tools & Metrology. Using a liquid based material and a unique imaging approach the V-Flash® printer, priced at less than ten thousand dollars, builds high quality, detailed models and parts. The final requirement for Children's Hospital was for this low cost 3D printer to recognize and ‘print’ models from actual CT Scans of infants delivered through their Vworks software.

According to Mr. Zignego, “With V-Flash® we have been able to create solid models which accurately represent the morphology of the nasal pharynx from CT scans. In fact, we are the first to create accurate 3D models of an infant nasal and oral passage. These models allow us to test the efficacy of various respiratory device interfaces, such as nasal prongs.”

The research teams and bioengineers at Seattle Children's continue the battle against childhood diseases and conditions. The V-Flash® Desktop 3D Printer is proving to be an important weapon in their arsenal, helping to develop effective solutions so children can grow up to be healthy adults.

moreinfo@3dsystems.com
www.3dsystems.com
www.printin3d.com

