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3D Systems Unveils 3D printed Bespoke[™] Braces for Chronic Condition Scoliosis

"We typically think of design as design, and medicine as medicine, though in many cases, good design simply becomes good medicine" - designer Scott Summit.

ROCK HILL, South Carolina –June 9, 2014 – 3D Systems (NYSE:DDD) announced

today that it has successfully completed a pilot program for its new Bespoke[™] Braces, a first of its kind, personalized, 3D printed brace for children and young adults with scoliosis. In the Bespoke process, a prototype 'check-socket' brace is fitted to each patient, and, when considered correct, it is digitized to create a digital reference underlay. Once digital, the brace is further manipulated and adjusted as needed, and 3D printed using 3DS' selective laser sintering (SLS) technology for optimal comfort, flexibility and durability.

3DS's personalized medical device team working in collaboration with Dr. James Policy, MD of Stanford University and Robert Jensen, CPO,



Meradith, a pilot program participant, models her 3D scanned-to-fit and printed Bespoke Brace, personalized to her sense of style.

tested 22 patients at Children's Hospital of Oakland. Across the board, patients responded favourably to the enhanced aesthetics of the brace as never before seen with traditional braces, and reported strong levels of wear and compliance.

Idiopathic scoliosis is defined as a lateral or rotational curvature of the spine that initially appears in children during the prepubescent ages of 8-13, and is currently affecting nearly 7 million Americans, 90% of which are female. The condition may often be corrected during the years of greatest spinal development with proper use of a brace. If traditional bracing does not succeed, then a 'full spinal fusion' may be necessary, where metal rods are affixed alongside the spinal column. Traditional braces take the shape of a rigid, restrictive torso shell extending from armpit to hip, exerting a strong, corrective counter-pressure against the ribs and hips. Children are required to wear such brace nearly full time for an average of 2-3 years until reaching skeletal maturity. In reality, young patients often remove the brace often enough to render the treatment ineffective and resulting in eminent surgery. 3DS' personalized Bespoke Brace removes traditional brace compliance barriers with scanned-to-fit design and breathable, lightweight, comfortable braces unique to each patient in stylish patterns.

"All of our children wanted the Bespoke Brace," according to Dr. Policy. "We had a small 3D printed scale model of the brace on my desk. Once the children saw this, they all wanted one. I've never seen children respond so positively to a brace. It was so cool that once they were fitted, many were showing the brace off to their friends."

Dr. Policy continues, "It will take data to convince the insurers and medical community the value of this technology, but common sense dictates that if the children like their braces and are more comfortable wearing the devices, we will see higher compliance and greater success. The early data from our pilot study appears to support this. The Bespoke Brace promises to be an important advancement for these children."

Learn more about 3DS' commitment to *manufacturing the future* and its patientspecific healthcare breakthroughs at <u>www.3dsystems.com</u>.

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About 3D Systems

3D Systems is a leading provider of 3D printing centric design-to-manufacturing solutions including 3D printers, print materials and cloud sourced on-demand custom parts for professionals and consumers alike in materials including plastics,

metals, ceramics and edibles. The company also provides integrated 3D scan-based design, freeform modeling and inspection tools and an integrated 3D planning and printing digital thread for personalized surgery and patient specific medical devices. Its products and services replace and complement traditional methods and reduce the time and cost of designing new products by printing real parts directly from digital input. These solutions are used to rapidly design, create, communicate, prototype or produce functional parts and assemblies, empowering customers to *manufacture the future*.

Leadership Through Innovation and Technology

- 3DS invented 3D printing with its Stereolithography (SLA) printer and was the first to commercialize it in 1989.
- 3DS invented Selective Laser Sintering (SLS) printing and was the first to commercialize it in 1992.
- 3DS invented the Color-Jet-Printing (CJP) class of 3D printers and was the first to commercialize 3D powder-based systems in 1994.
- 3DS invented Multi-Jet-Printing (MJP) printers and was the first to commercialize it in 1996.

Today its comprehensive range of 3D printers is the industry's benchmark for production-grade manufacturing in aerospace, automotive, patient specific medical device and a variety of consumer, electronic and fashion accessories.

More information on the company is available at <u>www.3DSystems.com</u>.