Boeing Patent Donation to the University of Pennsylvania Could Help Treat Bone Disease and Injuries

Material used in the antenna units of F/A-18E/F fighter aircraft could one day be used to strengthen or replace bones in humans, thanks to a patent donated by Boeing to the University of Pennsylvania.

The patented material -- a thermoplastic syntactic foam -- was developed by the Boeing Phantom Works R&D division primarily to eliminate electromagnetic interference in antenna units mounted in the wings of the F/A-18E/F Super Hornet carrier-based aircraft.

But Phantom Works scientists have since discovered that the material has remarkable medical possibilities as well. Not only is it bio-compatible, its strength, density and porous properties are similar to those of natural bone.

Since Boeing is unable to further develop this technology for medical applications, it has donated the patent covering these applications to the University of Pennsylvania, where researchers will continue its development.

"We concluded that the best way to complete the technology development and realize its full potential was to donate it to the University of Pennsylvania, an institution with a top-notch orthopedic facility," said Gene Partlow, Boeing vice president of Intellectual Property Business. "The University's technology transfer office has an outstanding record of successfully commercializing medical technologies."

In the United States alone, more than a million patients a year require bone augmentation, experts estimate. If further research by the University of Pennsylvania is successful, thermoplastic syntactic foam could be used to repair bone defects, provide prostheses for maxillofacial reconstruction, serve as intervertebral spacers, and be used to fabricate orthopedic and other implants.

"Penn is pleased to accept the donation of the patent from Boeing and to use the gift to further our efforts to commercialize promising new technologies in the area of orthopedic medicine," said Louis P. Berneman, managing director of the University of Pennsylvania's Center for Technology Transfer.

Partlow is also pleased. "This is what our Boeing Intellectual Property Business is all about -- maximizing the value of our ideas and inventions by finding applications for them outside of Boeing's core business areas," he said. "It's a great feeling to know that one of our materials may help restore the health of millions of patients around the world."

###

01-128

For further information:
Dave Phillips
office: (312) 544-2125
david.j.phillips@boeing.com
William Cole
office: (314) 232-2186
william.cole@boeing.com