

3D Printed Bone Grafts



A team of college students is working on a way to 3D print bone grafts that will mimic the complex, porous architecture of the skeleton down to its micro and nanostructure level. The team has won the Cal State Long Beach Innovation Challenge and will receive a \$10,000 grant in seed funding, an office space and assistance in developing a sound business strategy.

“The bone printer is a unique technology that can replicate not only bone structures, but bone microstructures – and even nanostructures,” CEO Trevor Wagner said.

The technology can be useful in bone cancers that require amputation. It will also be useful in procedures like hip replacements. The LuxNova OsBot 3D printer will imitate the porosity of the bone and will try to 3D print bone material that will match the actual bone. This will help in minimising the risk of the body rejecting it. In addition, the technique is expected to dramatically improve the healing time.

The idea of 3D printing bones has been attempted previously by Italian researchers who are using the technology for surgical templates. A Chinese medical team has also printed a replacement bone and has implanted it in a child.

The team of students points out that the technology is nascent but could be quite useful. They are already exploring new markets and business opportunities for 3D-printed bone grafts.

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Image Credit: LuxNova

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