An Evaluation of Potential Advances in Limb Immobilization for Orthopedic Healing

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This project is a three year study in investigating possible advancements that could made in the medical world. I created 3D printed casts and did comparative testing with different, more modern materials. Durability/ strength testing was done with fiberglass and carbon fiber casts. The data was then compared to data from previous years to further support my argument that 3D printed casts are the more optimal for healing and makes the life of the patient much easier during the healing process. Waste management and sustainability was also an area that was taken into consideration. The weight and volume of each cast was found to compare the amount of waste that would be produced from each cast. This was done to show which cast would be the most suitable for the environment. Stress and strain calculations were done to show exactly what each cast could withstand.

Awards Won: