Synthetic Bio-manufacturing Center | Biological Engineering

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The Department of Biological Engineering is constantly working on developing new and innovative Bioproducts that can solve some of the most challenging contemporary dilemmas of the 21st century.

Recently, a multidiscipline team with members from the Department of Biology, in the College of Science and the Department of Biological Engineering, in the College of Engineering at Utah State University have collaborated to create a short YouTube video showcasing their current research endeavors and accomplishments at the USTAR Synthetic Biomanufacturing center. These faculty members include the director of the Synthetic BioProduct Center; Randy Lewis, USTAR Professor of Biology; Jon Takamoto, and Biological Engineering Professor; Ron Sims.

Randy Lewis's work with spider silk has a wide range of implications ranging from creating biomedical coatings to developing artificial ligaments and tendons. These technological feats are possible because of spider silk's unique physical and chemical properties. It is an organic material that is more durable than Kevlar and simultaneously more flexible than nylon, no other artificial material contains this combination of properties.

Jon Takamoto's examinations of the antibiotic, kanamycin, has lead to the development of a new class of fungicide. This fungicide is simpler and more cost effective than the traditional way of producing fungicides, especially with there being a 15 to 20 billion dollar global market for combating crop diseases the implications of this research are tremendous.

Ron Sim's research is concerned with harvesting Bioproducts from algae. His research is unique because he and his students take wastewater from a variety of sources such as hydraulic-fracing waste, swine waste, dairy waste, and municipal wastewater to grow algae that are then used to create useful Bioproducts such as plastics and bio-oil.