

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ  
КАФЕДРА ІНОЗЕМНИХ МОВ  
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ ЦЕНТР

МАТЕРІАЛИ ІХ МІЖВУЗІВСЬКОЇ  
НАУКОВО-ПРАКТИЧНОЇ КОНФЕРЕНЦІЇ  
ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ  
КАФЕДРИ ІНОЗЕМНИХ МОВ

**“TO MAKE THE WORLD SMARTER AND SAFER”**

(Суми, 26 березня 2015 року)  
The ninth scientific practical student`s, postgraduate`s and teacher`s  
LSNC conference

## THE NEXT GENERATION OF BIONIC LIMBS

A. Zimovets – Sumy State University, group ET – 31  
S. Zolotova – E L Adviser

At present due to the rapid technological progress and the enormous scientific advances a wide range of different adaptive, auxiliary equipment for people with disabilities are offered. Nowadays there is a rapid development of new achievements and developments in this area. The main purpose is the desire to bring the function of real hands and feet to an artificial limb.

Yet, all the bionic devices do not fully resemble their natural prototypes, but scientists are engaged in hard work to solve this problem and further improvement of prosthetic limbs. The main problem of outdated designs today is the lack of flexibility and a problem to be well connected to the human body, as well as the fragility and unnatural, unsightly appearance. Prostheses, which in the old days replaced the arm / leg, can not work as their full-fledged prototypes - the relevant parts of the body, and are not able to approach the capabilities of their natural counterparts.

Hugh Herr, inspired by nature's own design, has been working out the next generation of bionic limbs and robotic prosthetics. Herr Hugh lost both legs in a climbing accident 30 years ago. Now, as the head of the MIT Media Lab's Biomechatronic group, he shows his incredible technology in presentations— with the help of a ballroom dancer Adrienne Haslet-Davis, who lost her left leg in the 2013 Boston Marathon bombing, and performs again for the first time on the TED stage. This behavior is both technical and deeply personal.

Nowadays one can find the newest devices and spare parts for disabled people at the consumer market like the prosthetic leg model consisting of two key elements - the foot and knee module and equipped with built-in microprocessors. These devices can have special programmes for more natural, relaxing walking and other movements.