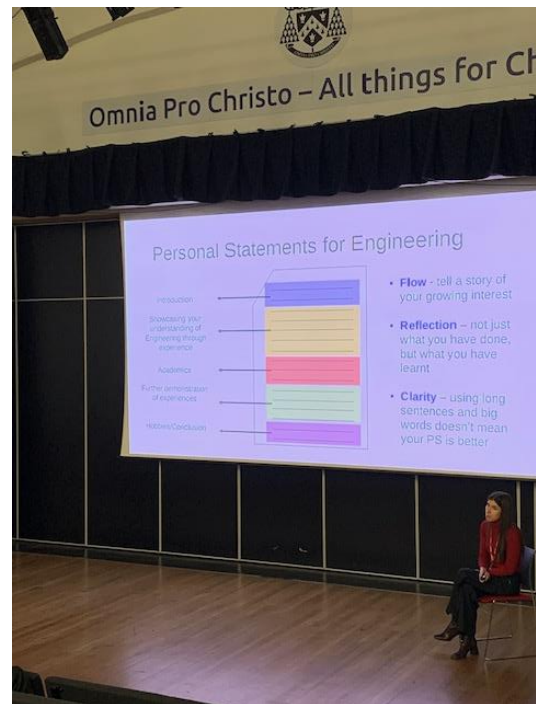
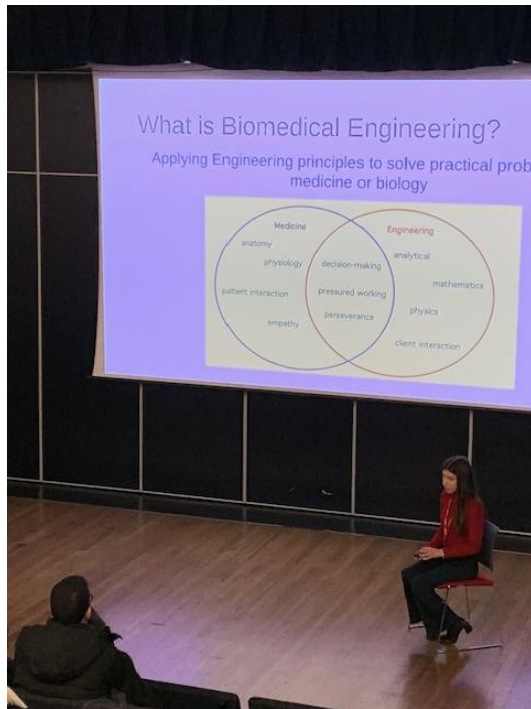


Wiseman Career Lecture 14



On 22nd January we were finally able to welcome our ex-student Ciara Gibbs, who has completed her Master's Degree in Biomedical Engineering at the Imperial College and is still studying there for her Ph.D. as well as working as a Lecturer and Admissions Tutor. Ms Gibbs provided insights into the topics she studied so far, such as hip implants for patients with osteoarthritis and all the complicated procedures that are used for each individual patient. During the design process of each implant engineers look at the mechanical properties of the bone to measure the joint fatigue as well as toxicity in materials, for example cobalt, which in the past caused heart problems and nerve damage in patients. The most interesting aspect of her talk was what she is researching for her Ph.D., which is operating prosthetics using patients brain impulses by using motor neurons and the electric fields they can emit. We were all amazed because it is an underdeveloped field that has huge potential to give amputees full control of the artificial limbs. She also talked about using 3D imagery and artificial intelligence to recreate a model heart of a patient to analyse its faults and to assist doctors during Cardiomyopathy "hole in the heart surgery" that involves cardiac catheterisation procedure. The 3D model shortens the operation which lowers the risk of cancer due to radiation from surgery to both the patient and the medical team. This showed students that Biomedical Engineering is not just about artificial limbs, but can also put you in a field of designing technologies and equipment that will be used in surgeries such as the Da Vinci Robotic Surgical System. We are hoping that Ms Gibbs has inspired some of our Y12 Biology and Physics students into researching further into this amazing but lesser known branch of engineering that sits at the crossroads between engineering and medicine.