

Research project and supervisory team

Supervisory Team	Tania Dottorini
Short introduction & description of research project	<p>Project title: <i>Tackling the pandemic of antibiotic-resistant infections: An artificial intelligence approach to new druggable therapeutic targets and drug discovery</i></p> <p>The use of antibiotics to control bacterial infections is perhaps the most important achievement of modern medicine. However, we have failed to keep pace with microbes becoming increasingly resistant to available treatments. Antibiotic-resistant infections are already another global pandemic claiming almost 5 million deaths per year globally.</p> <p>The increasing isolation of strains resistant to "last resort" antimicrobials has significantly narrowed, or in some settings completely removed, the therapeutic options. This is particularly alarming in low and middle-income countries. Unfortunately, new classes of drugs are not being invented and resistance continues to spread inexorably. A better understanding of the means used by microbes to resist antibiotics may result in the discovery of hitherto unknown targets suitable to develop new drugs against.</p> <p>In this research, we will use artificial intelligence, bioinformatics and microbiology to identify new potential druggable targets that when blocked may render the microbe susceptible to antibiotics. Next, and utilizing other learners, we will identify drugs that can block these targets. Our analysis will also target another important aspect linked to antibiotic-resistant infections that is transmission, again using a combination of expertise we will use our and publicly available data to study drivers and transmission of resistant pathogens in different anthropogenic environments including (communities, hospitals, livestocks, etc.,)</p>
Contact points	Dr. Tania Dottorini tania.dottorini@nottingham.ac.uk