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Discovering New Antibiotic Producing Bacteria in Soil

The purpose of the project, as part of the Small World Initiative, was to isolate new antibiotics from bacteria collected from soil samples taken from the Castleton University campus, specifically, from the woods just behind the South House dorm. The Small World Initiative is a global organization, which maintains an online database of different soil samples, collected by students, from around the world. From the data, potentially new antibiotics can be discovered and purified for therapeutic use. To obtain individual bacteria, standard microbiological techniques were used to isolate pure cultures on agar petri plates. Further testing included identifying natural antibiotic production against "safe" strains of the most common nosocomial pathogens. I have initially identified three separate bacterial colonies with antibiotic production against the different nosocomial pathogens. These bacteria are being identified with classic techniques, such as shape, as well as molecular techniques like PCR. From these tests, data will be used to help identify the antibiotic producing bacteria which will be submitted onto the Small World Initiative database for other scientists to use for future reference.