Using Genome Sequencing to Develop a Probiotic within the Turkey Gastrointestinal Tract

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Genome sequencing, the future of bacterial medicine. My name is Josh Proehl and I used genome sequencing to find a natural probiotic to replace the use of low dose growth antibiotics in turkeys. Minnesota turkeys, without antibiotics, weigh statistically significantly less than a turkey from surrounding states. This problem is normally fixed using antibiotics to balance out production. However, as of January 1, 2017 Minnesota legislative has banned the use of low dose growth antibiotics in turkeys, so a new solution is needed. Genome sequencing allows us to break down bacteria to the very essence of what gives them advantages over others. I was able to isolate a single clade of bacteria that have significant genetic advantages the no other probiotic on the market today offers. These advantages allow the clade to not only survive within the gut, but they allow the bacteria to colonize and multiply at faster rates than other bacteria. Genome sequencing is what enables research like this to happen and has the power to push the boundaries of medicine today.