

A Discussion in microbiology and why it is important.

Microbiology is a very broad topic that not many people think about in their day-to-day life. In reality, it is present in everything they do because bacteria are everywhere. It is on every household item, your phone, and even your skin as you read this. Microbiology is in our daily lives, whether we know it or not. To further help me discuss this topic, I interviewed Professor Connie Budd of the Oklahoma State University microbiology department. During the interview, I asked about microbiology, why the topic was important in her eyes, and what she believes is the biggest issue in the field. She believes microbiology is important because bacteria are the basis of many diseases, drugs, and food. Bacteria make up many of the modern medicines we use today, making them vital in the world of healthcare. They are also used as building blocks for massive breakthroughs in labs. She believes the biggest issue in the field is the lack of information. You always hear about different medical breakthroughs and diseases on the news, but no one talks about bacteria and the field of microbiology. She goes on to say that people tend to look over the topic of bacteria and microbiology because it is something they cannot see, but it always affects us. I then asked if she had any research that she was proud of and wanted to share. She referred me to a study she helped with in 2016 about the *Staphylococcus hominis* bacteria living on human skin. She looked at exactly what it does in our microbiome and how it affects us. After reading it, I see why she believes that the study of microbiology is so important. *Staphylococcus hominis* is a bacterium that usually lives on human skin and contributes to the body odor of humans. While studying this bacteria, she found that it is still a very opportunistic bacterium. This means it will try to change itself to try and infect its host if it gets the chance. She could only find this after taking a live swab from a person's skin and testing for certain factors. The factors she found were metabolic versatility and virulence determinants. Metabolic diversity is the bacteria's ability to use different sources of nutrients to infect its host. Virulence determinants are factors that help bacteria get past the natural defenses of your body. This discovery shows that something you carry around with you every day that you didn't know you had can infect you and get you sick. While these infections typically occur in people with weaker immune systems, it is still a great discovery that shows 'harmless bacteria' can still be bad given the right factors. This raises the question of what other bacteria we carry around that could be infectious or harmful to us. This is where microbiology and its researchers come in to find those answers that protect the population from unseen bacteria.

References

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