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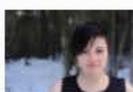
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Ishaq links gut health to social equity, advocates for policy discussion

February 1, 2021 | [Current Research News](#), [Faculty Spotlight](#)

Gut microbial communities are found throughout the digestive tract of all humans, animals and insects. As a human host to these living microbes, our diets, lifestyles and environmental factors recruit different microbes into our gut and retain them, or make circumstances hospitable.

The lack of consistent access to fresh and nutrient-dense foods can compound unhealthy gut microbiomes over time, impacting long term health.

So says Dr. Sue Ishaq, an Assistant Professor of Animal and Veterinary Science in the School of Food and Agriculture at the University of Maine.

"If you're on food assistance programs and you don't have enough to get fresh fruits and vegetables throughout the entire month, and you decide to get canned [fruit]... those canned foods might be similarly nutritious, but they don't actually have quite the same beneficial effects as being able to have those fresh fruits and vegetables," says Ishaq.

"If you're eating a slightly different diet or if you're not even able to afford those canned vegetables, you're going to recruit a different gut community, that's going to be less helpful to your health over time. And so you start to compound the difficulties and the health disparities," she explains.

Ishaq's work focuses on how social equity and access to resources, like adequate nutrition, can impact human gut microbial communities. She researches how to recover healthy gut communities in animals and humans after they have gotten to the point of chronic microbial dysfunction and disease.

Ishaq spends most of her time looking at gut microbial communities in animals, primarily in



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livestock. In 2018, she began to shift some of her attention from animal microbiomes onto human ones while at the University of Oregon, where she was doing post-doctoral work. She worked with architects who were concerned with the idea of social equity in building quality and the proximity of buildings to resources. They began looking at microbes that are found inside buildings and on surfaces, and how these microbes would travel through rooms and buildings based on how humans were using these spaces.

After many conversations with these architects and other scientists, Ishaq began to think more about how social equity impacted human microbiomes.

These conversations inspired her to propose a discussion-style class for the University of Oregon Honors College during the summer of 2019. After three weeks, Ishaq and the class put together an essay that encompassed their class discussions, and the piece was published in [PLOS Biology](#), a peer-reviewed, open-access journal.

Her social equity work gained traction and was picked up by a variety of news agencies. After her class ended, Ishaq moved to Maine in July 2019. Her work continued to draw attention, and people began to ask her what the next steps would be.

Early last year Ishaq formed the Microbes and Social Equity Working Group, composed of scientists from a variety of disciplines, medical practitioners and policymakers, who collectively look at how to connect microbiomes and public health, policy and social disparities.

"We're starting to understand that microbes are the thing that connects us to other people and connects us to our environments. In the same way that we aren't a single individual that can biologically isolate ourselves from other individuals or other microbes," Ishaq explains.

Public policies can impact health disparities and social inequalities. Understanding the social connection to microbiomes can help policy-makers adapt their plans to improve overall public health. These policy decisions can look at how to ensure access to adequate nutrition, pollutant-free building spaces, and healthy air quality.

"Often what we do as biological scientists is just talk to each other about what we know now, but we don't have the time or the focus or the toolset to make any of that happen. Because again, I'm not trained as a politician...well, I know things, but it's just, how do I get that information to you so that we can make a positive change?"

One of Ishaq's main goals is to facilitate interdisciplinary discussion about microbiomes in humans and public policy. By working with a group of diverse researchers and practitioners, she hopes to figure out ways to guide policy and integrate the world of biology into public policy.

This involves creating communication and cooperation between various disciplines to not only understand how the human microbial community functions and how it varies between different social groups, but how to influence policy on how to help improve the health of humans overall.

Over the course of the next 12 weeks, Ishaq is hosting a series of 12 speakers, focusing on diverse aspects of human microbiomes and social equity. The speaker series explores how microbes connect public policy, social disparities and human health.

This series features a variety of speakers from different academic backgrounds. Some presenters will talk about their specific research projects, while others will discuss research that could be done to further the field. Other topics range from creating teaching pedagogies to bringing classroom materials to life, while medical practitioners will talk about how to apply what we know to the medical field.

This is a part of the University of Maine's Institute of Medicine Seminar Series and will

culminate in a symposium during summer 2021. Dr. Nicole Redvers is the first speaker in the series 12-1 p.m. Feb. 10. Redvers will be speaking about how microbes and the concept of social equity apply to Indigenous Peoples and their traditions. See the [seminar event page](#) to register.

For a full list of seminar events, visit the [Institute of Medicine](#) website.

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