Well, good afternoon everyone.

I want to talk today a little bit about my interest, and it looks like I need to pick up a different clicker, which is tuberculosis.

So tuberculosis is the leading infectious cause of death worldwide. And we believe that last year it affected around 10.6 million people.

The World WHO TB report comes out every year around this time, so the latest data that we have is from 2021.

And following the pandemic, there was a big decline in the number of people having access to quality assured diagnosis and initiation of treatment. But it’s long been the case that a large proportion of people living with TB go undiagnosed.

We think more than 4 million people. So one of the things that we’re interested in is how can we identify those people? There’s many reasons why they aren’t diagnosed.

One challenge of course, is that TB is often asymptomatic. So we need to identify better ways of screening and identifying people in the community who don’t know they have symptoms.
And then we need to improve access for people who do have his symptoms and encourage them to seek care in clinics where they can get diagnoses.

The tool that we use in our laboratory for doing this work is called implementation science.

I know there are probably a number of people in this room that have heard of this field, and there’s a course that I teach in the fall, for those who are thinking about their courses for next fall, which goes over what implementation science is.

But in short it is a systematic approach for the design, delivery and evaluation of strategies to improve the uptake of proven interventions into routine practice.

And we think of it as a translational research discipline.

Translational research involving multidisciplinary collaborations that move ideas from their foundational basis, whether that’s in the laboratory, in fundamental biology as we were hearing about a little bit earlier from Brian.

Or more on the other end of the spectrum where our group works, which is thinking about how do we move from patients to practice...
and ultimately to public health. And it turns out that that discipline doesn’t happen just when good ideas get published in journals showing that they’re effective. It’s really necessary to think about how would those ideas be adapted to a real world setting. So in the contexts of TB, I wanna talk about three different types of studies that we’ve done. Formative work to help us understand what the nature of the barriers are to delivering these evidence-based services for TB. Actual implementation studies where we introduce these ideas. And then evaluation studies where we try to figure out what works and why or why it doesn’t work. And a lot of the work that I’ve done is in the area of contact investigation. So contact investigation, I think as everybody in the room is probably familiar, is a strategy where we look for high risk populations of having a disease like tuberculosis, among those that are close contacts to people with tuberculosis, knowing that to tuberculosis is transmitted from person to person through respiratory aerosols. And that work that we’ve done in the area
of contact investigation has spanned different parts of the globe, because we know in different contexts there may be different reasons. We’re interested in understanding both the generalizable reasons, why it’s hard to do contact investigation, and also some of the setting specific regions. So for example here on the far left, in Columbia one of our scholars, Gustavo Diaz, who was a postdoctoral fellow at the GHS program, used routine public health data to map the barriers. Here below, this is a qualitative research study that was looking at another aspect of TB care which is education and counseling, which is very important to get people newly diagnosed with TB to be willing to share the contact information of their close contacts, and also for them to be able to achieve good treatment outcomes on their own and get initiated in other therapies that may be important like HIV treatment. And so this is work that was carried out with Alisse Hannaford, who was a medical student at the time. Then the third example was looking at these similar methods, not just for TB case finding.
in the community that it’s searching,
but also for treatment of TB and for prevention
as work that was done by Christina Parisi, who was an EMD student a few years back and is now a PhD student at the University of Florida.
We’re also interested in taking this information about barriers to delivery of care and try to combine it.
So taking qualitative information, taking quantitative information, and developing strategies to try to change that.
One of the strategies that we’re very excited about is the use of collaborative design approaches, specifically human-centered design, where we try to come up with solutions that work for the communities that we’re working with.
And so here’s an example in the middle of (indistinct) who’s a laboratory manager in one of our projects in Uganda.
We’re using the human-centered design approach with the post-it notes to try to come up with good ideas.
And then we’ve developed those into a couple of different types of strategies.
So these are described in publications by Amanda Gupta, who’s a research coordinator in our laboratory.
We're also interested, even at the design phase, in thinking about what the costs are. A lot of times we wait until the end of a study to evaluate that. But in this particular project, we knew we learned from our prior work that it's very expensive to kind of develop strategy. So we looked at the cost strategy, and this was work led by Patricia Turimumahoro, who is currently a GHES scholar. And we just recently completed a pragmatic trial using a stepped-wedge cluster-randomized design where we took a human-centered design approach that include multiple components. And these components include things that ease the multi-step process of contact investigation to kind of help participants, namely household contacts, better be able to engage in these services.
Things like a motorcycle rider, to take them to the clinic.

Educational strategies and also instructional information to help them produce sputum.

And combining that with strategies of quality improvement to help community health workers better deliver that.

And we are just now looking at that preliminary data. It looks very promising that these strategies can be in fact impactful.

And we’re now testing those to other aspects like TB prevention.

So with that, I’ll close and see if there’s any questions, or I can take them at the end.

Thank you.