Thank you very much Jerry for this kind introduction and thank you very much for the opportunity to talk to you this morning. Before we get started, maybe it’s worth defining what we actually really mean by mixtures, because certain people have different ideas about mixtures. Mixtures can be certain products; products in themselves are already mixtures. But what we're really talking about is the situation where several chemicals, loads of them, hundreds, we don't know, thousands, are released into the environment, ultimately come together in our tissues and than sit there and some how needs to be assessed, produce a joint effect. So what I'm talking about today is mostly focusing on this. How can we deal with this knowledge of co-exposure to a large number of chemicals, and how can we assess their effects? What I'm not so much going to talk about is mixtures sort of, when they're tested, and in effect really are then treated as if they were a single chemical, that’s not the topic of my talk today. Although there is a lot of useful research going on in this area as well, it’s called whole mixture testing.

So analyzing toxicological mixtures, why would we do this, what could this be good for? The most prominent goal of experimental work in this area is to assess whether a group of chemicals act together in an additive fashion or synergistically or threes antagonisms. So this needs to be assessed, that’s very important. Another goal could be to identify the most important component in a given exposure scenario or to analyze risks from current or expected exposure situations. We could do this and venture into this field with a view of comparing and ranking chemicals for priority setting with the aim of rationalizing resource allocation for clean-up etc, etc. And lastly of course, setting of environmental or human health standards, taking account of mixtures.

There are various approaches to this, we can directly test the mixture of concern. That would be this whole mixture testing I mentioned in the beginning. We could make, if this is possible, conclusions from mixtures with similar composition. But really, what I am focusing on today is looking at mixtures from the point of view of components. This is called a component-based analysis of mixtures, component-based approaches. Most importantly, the bottom-up approach, is it possible that when we know the toxicity of the effects of the mixtures individual components, can we than rationally and correctly anticipate the joint effect?