



Episode 2: What is Data Science and Why is it Important?

Narrator:

Hi and welcome to Viewpoint with Dean Mary Klotman from the Duke University School of Medicine. Today we spoke with Dean Klotman and asked her about data science. "What is it and why is it important?"

Dean Klotman:

Data Science is really this growing field of quantitative scientists, scientific method and processes that you need to analyze very, very, large data sets that might come out from a lab; could even come from a single cell; they might come from a health system; or might come from the National Medicare Database. That data has a lot of information in it that we need, either to better care for patients, or to really develop a scientific hypothesis. The problem is that we're not organized, currently, to really be able to utilize that data.

So, realizing the power of big data, my first initiative was to create a Health Data Science Center, and engage Rob Califf, the former FDA Director to lead that. The cross-campus initiative, will really bring teams of scientists, both quantitative scientists that have the methods to analyze the data with the clinical and lab-based scientists that bring the questions to the table.

The center will address a broad range of questions, some might come from our clinical mission and ask "can we predict which patients might do poorly in an ICU setting?" And the idea is, with quantitative scientists and experts in machine learning, we will be able to have better algorithms to predict who might not do well, and then to put in processes that might prevent an adverse event.

On the laboratory side, we might bring together a team of basic scientists and quantitative scientists to ask "if we perturb a cell, and look at a data set before and after, can that tell us what change in that cell we might be able to prevent? Let's say, in a cancer cell. So, a whole range of questions we'll be addressing.

I think that the power of data science, right now, is just enormous. I will be very disappointed if we really can't take advantage of it.

Narrator:

Viewpoint is a production of the Duke University School of Medicine. Tune in each month for Dean Mary Klotman's thoughts and ideas about important and timely topics and issues related to medical education, science and discovery, and patient care.

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