

SEMINAR ON *'Use and Abuse of Statistics'*

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Venue: EWUCRT Seminar Room, Room no. 560
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Speaker:



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ABSTRACT

Statistics, as a subject, does a hugely challenging job. It tries to quantify the uncertainty of this world. According to Chernoff and Moses (1959), Statistics is the science of decision making in the face of uncertainty. For this reason, there is a risk that decisions based on sophisticated statistical techniques may not hold in reality and few incidences may push back Statisticians and Statistics teachers to the unfair impression that Statistics teaches how to lie with data. To quote the eminent writer Mark Twain (1924), "The remark attributed to Disraeli would often apply with justice and force: 'there are three kinds of lies: lies, damn lies, and statistics'". This may be the most unfair quotation ever made against Statistics. The American humorist Evan Esar (1943) commented "Statistics is the only science that enables different experts using the same figures to draw different conclusions." But the main problem lies in somewhere else. To quote Paul Velleman (2008), "Those who believe incorrectly that Statistics is solely a branch of Mathematics (and thus algorithmic), often see the use of judgment of Statistics as evidence that we do indeed manipulate our results." We must realize the fact that Statistics lives on the empirical rather than the theoretical side of science. The availability of high-speed computers and statistical software have freed statisticians from the grip of mathematicians to a greater extent, but it has created major problems the other way around, Researchers who have a little knowledge about statistical methods can go to a computer and can create lots of senses and even more nonsense with the data. This problem has become so serious that many textbooks now contain sections on 'Nonsense Statistics'. Conclusions drawn from a study are trustworthy only when appropriate design and correct sampling methods are used. We cannot rely on the results of hypothesis testing unless the validity of all underlying assumptions such as independence, normality, and purity of observations (free from outliers) are met. In this talk we will discuss all these issues in a non-technical fashion with lots of interesting examples showing the abuses of statistics in various areas of research. We will see its consequences and discuss the possible remedies.



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