The Teaching Statistics Trust Lecture 2018
for teachers of statistics in all subjects in schools and colleges

Christine Franklin
School Statistics Ambassador
American Statistical Association

Statistical Problem Solving:
the Art and Science of Learning and Teaching from Data

- **Improve your teaching of statistical problem solving and data literacy**

- **Discover the art and science of learning and teaching from data**

- **Improve ways to teach statistics in AS- and A-level Mathematics**

- **Help teaching the Skills Challenge Certificate in social science subjects**

- **Take away useful teaching resources**

- **A chance of a copy of** *Statistics: The Art and Science of Learning from Data*

No charge for attending; question/answer session to follow; refreshments provided

Venues and Times

Q-Step — A step-change in quantitative social science skills. Funded by the Nuffield Foundation, ESRC and HEFCE	*Cardiff University Q-Step Centre* **Thursday 6 September 2018** *(16.30 Glamorgan Council Chamber - King Edward VII Avenue)*	CARDIFF UNIVERSITY / PRIFYSGOL CAERDYDD — School of Social Sciences / Ysgol y Gwyddorau Cymdeithasol
School of Mathematics & Statistics — University of Glasgow	*University of Glasgow* **Wednesday 12 September 2018** *(17.00 Building C3, University Place – Light buffet refreshments from 16.00)*	University of Glasgow
ROYAL STATISTICAL SOCIETY	*Royal Statistical Society South West Group* *University of Plymouth* **Tuesday 18 September 2018** *(16.30 Rolle Building – Room 101)*	UNIVERSITY OF PLYMOUTH

Precise room numbers will be posted on the web site below and outside each building.

Abstract

After nearly 40 years as a statistics educator, I often reflect about my professional experience with learning and teaching statistics – remembering the past and feeling guilt about how poorly I must have taught my students those first years, trying to stay current with constantly changing pedagogy and assessment in the present, and making predictions about the future.

How often do you reflect about your experience as a statistics teacher? I often reflect on what a great feeling it is to start each day knowing we work with students and colleagues aiming to see those light bulb moments of understanding the usefulness of data and statistical reasoning skills, but also the importance of being a healthy skeptic of the interpretation of small and big data we are often presented with.

What are the lessons we have learned that will positively impact the data and statistical literacy of our students in the future? I have been fortunate to collaborate with amazing colleagues through the years who have enlightened and inspired me to learn these lessons to continue the journey for advocating data and statistical literacy in our society.

In this presentation I will discuss the art and science of learning and teaching from data (as I have experienced from writing 4 editions of *Statistics: The Art and Science of Learning from Data* and other resources specifically written for teachers) to help you improve teaching statistical problem solving and data literacy at the school level.

Brief biography of Chris Franklin

Christine (Chris) Franklin is the School Statistics Ambassador for the American Statistical Association (ASA) and elected ASA Fellow. She is retired from the University of Georgia as the Lothar Tresp Honoratus Honors Professor and Senior Lecturer Emerita in Statistics.

She is the co-author of two introductory statistics textbooks (including the one described below) and has published more than 60 journal articles and book chapters. Chris was the lead writer for the groundbreaking document of the ASA *Pre-K-12 Guidelines for the Assessment and Instruction in Statistics Education (GAISE) Framework* and chaired the writing team of the ASA *Statistical Education of Teachers (SET)* report.

She is a past Chief Reader for Advance Placement Statistics, a Fulbright scholar to New Zealand (2015), recipient of the United States Conference on Teaching Statistics (USCOTS) Lifetime Achievement Award, the prestigious ASA Founder's award and an elected member of the International Statistical Institute (ISI). Chris loves running, hiking, scoring baseball games, and reading mysteries.

Statistics: The Art and Science of Learning from Data (4th edition, Pearson)

The book takes a conceptual approach, helping all readers understand what statistics is about and learning the right questions to ask when analysing data, rather than just memorizing procedures.

This book takes the ideas that have turned statistics into a central science in modern life and makes them accessible, without compromising the necessary rigor. Teachers and students will enjoy reading this book, and will stay engaged with its wide variety of real-world data in the examples and exercises. Learning from data is both an art and a science – this book helps show you how.