The Bristol Scientific Club Programme of Meetings for 2020 -2021

The BSC meetings and dinners scheduled for:

- Saturday, 24 October 2020
- Friday, 27 November 2020
- Saturday 13 February 2021
- Friday, 26 March 2021

were cancelled/postponed as a consequence of the prevailing covid-19 restrictions.

(1) Saturday, 24 October 2020

Guest Speaker: Professor Peter Barham: "The science that makes 'Michelin' standard food possible and happens unseen in your own kitchen and dining room."

Creating nutritious and delicious food involves a great deal of science although most people just get on with it and follow recipes never understanding why they work (or don't). In this talk I will discuss aspects of the physical changes that occur during the cutting, mixing, heating and cooling of foodstuffs and how these affect the taste, aroma, flavour and texture of the resulting dishes. So, for example, you will learn about how the flavour of tomato in a sandwich depends on how you cut the slices (longitudinally, or latitudinally) and that keeping tomatoes in the fridge will prevent them developing much flavour. We will look at apparently simple questions such as "should you add salt to the water when boiling vegetables?" and ask how to cook the perfect steak or better how you can consistently cook steaks to you own (or your partner's) idea of perfection.

I will highlight how in the past two decades, many chefs have enthusiastically adopted a scientific approach to their cooking and incorporated the use of new technologies in their kitchens to prepare hitherto inconceivable dishes, to improve consistency of their products and to increase productivity in the kitchen.

I will tell you about some of the tricks chefs use to make you think their food is so much better than your own, and how they (often unknowingly) use a great deal of psychology in their restaurants.

Peter Barham B.Sc.(Warw.), M.Sc., Ph.D.(Bristol), F.Inst.P. is Emeritus Professor of Physics at the University of Bristol, and is actively involved with attempts to understand how plastics (polymers) change from the liquid state to the solid state (i.e. how polymers crystallize). He has wide experience of many other aspects of polymer physics including looking at biodegradable plastics and ultra strong polymeric fibres.

Prof. Barham combines a passion for penguins with his expertise in materials science by assisting with the design and production of novel methods of marking individual birds. He currently leads a major research project concerned with the conservation of the African penguin.

He is also very interested in the science of food and cooking and is author of the book 'The Science of Cooking'. He is particularly concerned to apply his scientific knowledge in the kitchen, which has led to many interesting collaborations with chefs and contributed to the creation of the new science of Molecular Gastronomy.

(2) Friday, 27 November 2020

(3) Saturday, 13 February 2021

Guest Speaker: Professor Jonathan Reid: "The air we breathe: Aerosols for good and bad."

Commonly, we think of aerosols as referring to spray cans used to deliver personal care products. However, an aerosol is a dispersion of any form of particulate matter in a gas phase. Aerosols not only represent one of the largest uncertainties in climate change, through their impact on clouds and radiative forcing, but they are a common vector in the transmission of disease and are a

significant component of polluted air impacting on health. Indeed, there is considerable uncertainty about the role aerosols play in the transmission of SARS-CoV-2 in the current pandemic, the value of wearing face masks and the importance of physical distancing. Conversely they can be used to deliver drugs to the lungs to treat respiratory diseases and provide an increasingly versatile approach to make new materials. In this talk, we will explore the unique properties of aerosols and why they are so challenging and elusive to study.
Jonathan P. Reid is Professor of Physical Chemistry at the University of Bristol, and has authored over 200 publications in the areas of aerosols in atmospheric chemistry, drug delivery to the lungs, formulation science and disease transmission. After studying at Oxford and periods as a post-doctoral researcher in the US and as a lecture at the University of Birmingham, he moved to the University of Bristol in 2004. He was promoted to Professor in 2009. He is the current President of the UK and Ireland Aerosol Society and director of the EPSRC Centre for Doctoral Training in Aerosol Science. He has held EPSRC Leadership and Advanced Fellowships.

(4) Friday, 26 March 2021
Speaker: Len Fisher: "How to Win an Ig Nobel Prize."
The avowed intention of the Ig Nobel Prizes, which are often awarded for quirky-sounding but serious science, is "First, they make you laugh; then, they make you think." Here I examine the real science behind some of the prizes, including the biologist who fed Prozac to clams and my own use of physics to work out the best way to dunk a biscuit, and ask whether the prizes fulfil a useful role or whether (as a former President of the Royal Society claimed) they actually do damage to science.
Dr Len Fisher, OAM, FRSN, FInstP, FRSC, FRACI, CChem, FLS is Senior Research Fellow at the School of Physics, University of Bristol. For nearly twenty years, Len's primary activity has been as a writer, speaker and broadcaster with the purpose of making science accessible by showing how scientists think about the problems of everyday life. He has published several best-selling books and is frequently on radio and television in the UK, Australia and elsewhere. He runs a scientific blog at www.lenfisherscience.com.